Introduction

New Jersey Local Records Manual: Intention and Scope

The purpose of this manual is to introduce local officials to the methods available for controlling public records entrusted to their care. These pages can provide the tools needed to solve record-keeping problems, increase efficiency and safety, preserve historical records, and save money.

The manual presents information in logical order, with appropriate procedures outlined for ease of application. The text is cross-referenced. Appended materials include forms, statutory citations, administrative guidelines and a general schedule for county and municipal agencies.

This publication does not suggest that all of the programs described should be implemented immediately or in their entirety, or in precisely the way indicated herein. The Division of Archives and Records Management recognizes that some local governments have their own in-house records management expertise, and that these professionals are responsible for ethically and legally upholding the law concerning public records.

Provided that mandated standards and legal requirements have been met, local agencies and authorities should always use procedures that are relevant to their organizational culture and techniques that are appropriate to their individual circumstances, especially administrative size. Costs and benefits, budgetary levels, and the value of records should always be considered.

By using appropriate techniques faithfully, local government will realize demonstrable benefits. While still fulfilling public responsibilities, they will avoid the cost of unnecessary space, equipment, supplies and labor for record-keeping operations.

Officials are encouraged to contact the Division of Archives and Records Management for clarification, additional detail, and to comment upon the usefulness of the manual. Because it is designed to be readily updated and revised, reports from officials who use the manual are not only sincerely welcome, but essential.

Address questions or comments to: New Jersey Department of State, Division of Archives and Records Management, 2300 Stuyvesant Avenue, CN 307, Trenton, New Jersey, 08625, or call: (609) 530-3200.

Records Management in New Jersey

A Brief History

Concern for the safekeeping of New Jersey's public records traces its beginnings back to 1765, when an act was passed to construct a building in each of New Jersey's capital's, Burlington and Perth Amboy, to protect the records of the Secretary of State's Office. In 1795, these repositories

were consolidated into a single building in Trenton.

Twentieth century concern for safekeeping of public records began in earnest with the creation of the Public Records Office in 1920. Most of the current functions of the central control of public records started there. By 1924 it was necessary for state, county and municipal agencies to obtain written permission for records destruction from the Public Records Office.

The Destruction of Public Records Act, 1953, created the State Records Committee. The State Records Committee consisted of representatives of the State Attorney General, the State Auditor, State Treasurer, Director of Local Government Services in the Department of Community Affairs, and the Head of the Bureau of Archives and History in the Department of Education. This body was mandated as the final authority involving public records.

In 1983 the Division of Archives and Records Management was created within the Department of State as part of a reorganization of state government. The division, as successor to the Bureau of Archives and History, now is the principal records management advisor to state, county and municipal governments. It is the administrative arm of the State Records Committee.

The Division of Archives and Records Management, Department of State, is composed of three bureaus: The Bureau of Archives and Records Preservation, the Bureau of Records Management, and the Bureau of Micrographics and Alternative Records Storage.

Current Practice

The Division of Archives and Records Management, Department of State, has four distinct areas of responsibility:

Records and Forms Analysis

1. Assists local agencies and authorities in conducting records inventories,

2. Appraises records of state, county and municipal governments, and schedules the records for retention, transfer and disposition through the auspices of the State Records Committee,

3. Offers advice in records management, files management, office automation, vital records programs, and disaster prevention,

4. Participates in records disaster recovery efforts through records identification,

5. Provides advice about forms analysis and design, and

6. Processes records disposal requests for records which have outlived their usefulness.

The Records and Forms Analysis Section of the Bureau of Records Management is located at the New Jersey State Records Center, 2300 Stuyvesant Avenue, Trenton. There is no charge for consultations. (see sections II, VI and IX)

Records Storage

1. Provides centralized storage of semi-active records for state agencies and authorities.

2. Provides records retrieval services for authorized state officials, and

3. Advises all public sector agencies about semi-active records storage options.

The Bureau of Records Management is located at 2300 Stuyvesant Avenue, Trenton, where it administers the New Jersey Records Storage Center (RSC), a low-cost storage facility with the capacity of keeping 250,000 cubic feet of semi-current paper and computer records from state government agencies and authorities. Consultations are provided at no cost to all public sector agencies. (see section III)

Archives

1. Appraises records for statewide historical significance and for permanent retention in the State Archives.

2. Accessions historical records — i.e. arranges for transfer of ownership form originating agencies,

3. Preserves historical records through conservation and restoration,

4. Arranges and describes historically valuable records,

5. Participates in records disaster recovery efforts, and

6 Assists all public sector agencies and authorities in identifying and caring for permanent records.

The Bureau of Archives and Records Preservation is located in the State Library Building at 185 West State Street, in the State Capital Complex, Trenton. The bureau operates the New Jersey State Archives, the official repository for all colonial and state government records of enduring historical value. Such records are maintained and are available to the public through exhibits or as reference material. The State Archives also produces a variety of printed and microfilm publications and sells microfilm copies of a large number of historical documents and manuscripts.

The bureau also provides reference services at the Archives Search Room, open to the public Mondays through Fridays, from 8:30 - 4:30, and on Saturdays from 9:00 - 5:00, and through the mail. Consultations are provided to public agencies at no cost. (see section IV)

Microfilm Services

1. Provides systems consultations and assists in estimating cost for microfilming projects to public sector agencies,

2. Conducts selected microfilming projects for state, county and municipal agencies on a charge-back basis,

3. Assists state, county and municipal governments in micrographics management, and

4. Monitors compliance with statewide microfilm standards for the public sector.

The Bureau of Micrographics and Alternative Records Storage is located the New Jersey Records Center, 2300 Stuyvesant Avenue, Trenton. The Central Microfilm Unit is considered to be one of the most advanced microfilm operations in the United States. Consultations are provided at no cost. (see section V).

Public Records

A record is created whenever information that is evidence of the activities of an organization is generated or received. This is true regardless of the medium, i.e., paper, microfilm, magnetic tape, floppy disks, etc., and includes duplicates or copies.

The term "public" can have two basic meanings:

1. **Ownership** — A record is public when it is evidence of activities of an operating unit of government or an agent of government which receives a substantial contribution of tax dollars to conduct its activities.

   A record is private when it is evidence of activities of an organization that does not receive any substantial contribution of tax dollars to conduct those activities.

2. **Access** — Agencies may allow unrestricted access to records because of right-to-know considerations. Such records are often called "public." Under other circumstances, an agency may restrict access to records because of considerations of privacy, confidentiality or security.

The degree of a record's accessibility is not a factor in determining whether a record is publicly or privately owned. For instance, classified military records concerning the national defense are public records with a high degree of confidentiality, and consequently are not freely accessible.

The status of a record is best determined by considering its ownership, not its accessibility. For the purposes of this manual, whenever the term public record is used, it shall signify ownership.

The Importance of Local government Records: A Public Trust

Local public records are evidence of taxes paid, services rendered and obligations met. These records are crucial to the organization of our society and are valuable to the daily operation of local government. Additionally, the value of some records endures beyond their active use because they provide unique evidence of significant actions and transactions that have affected the public.

The records of local government are public property and are held in trust for citizens. Public officials

must ensure that records are protected from unauthorized alteration, defacement, transfer or destruction. This is accomplished through compliance with statewide legal procedures mandated by the Destruction of Public Records Act as interpreted by the State Records Committee and administered by the Division of Archives and Records Management.

In addition to its mandated functions, the division assists local agencies and authorities in assessing current information management needs and in anticipating future concerns.

Generally, through the use of sound management practices, local agencies and authorities can develop economical strategies for fulfilling their public trust.

Records Management Coordinators & Liaisons

Some counties enjoy in-house records and forms management expertise. These in-house information management specialists are generally highly knowledgeable in both the statewide statutory requirements and guidelines administered by the Division of Archives and Records Management, as well as any relevant policies and procedures governing records management within their organizations. Often, these professionals are responsible for a local government's semicurrent records storage facility and its image-processing staff.

It is important to note that in-house information managers and division analysts work very closely to ensure that the public interest is safeguarded. Moreover, the New Jersey County Archives and Records Management Association (CARMA), a professional association of county records managers, allows a continuous information exchange and helps develop unified strategies to advance interests in local record-keeping matters.

In many situations where a local government enjoys in-house expertise, some of the processes described in this manual may be performed by such professionals. In those instances where an organization does not enjoy in-house expertise, or in which record-keeping is decentralized or "liaison duty" with the division is given as an ancillary role to officials with other responsibilities, the processes described in this manual will correspond much more closely.

In any case, the information provided by this manual will explain techniques, offer insights and list laws, regulations and guidelines that will help improve record-keeping efficiency and safety.

Records Management

Introduction

The term records management can have two basic meanings:

1. **The collection of methods** — e.g., micrographics, files management and inactive records storage — **used to control records,** and

2. **The specific processes of records control** -- which include records inventory, records scheduling and records disposition.

The following section describes the basic records management processes of the second definition: inventory, scheduling and disposition.

Records Management Objectives

The objectives of a records management program are to make records serve the purposes for which they were created as efficiently and economically as possible, and to provide for proper disposition after they have served their purposes. A records management program provides the means of controlling records beginning with creation or receipt, continuing through organization and maintenance, and concluding with disposition. The coordination of the records management process for state, county and municipal governments in New Jersey is the work of the Bureau of Records Management, Division of Archives and Records Management in the Department of State.

The Records Management Process

Records Inventory

Record holdings must be inventoried before appropriate controls can be instituted. An inventory is a complete listing of records by record series, together with necessary descriptions and supporting information. A record series is a group of identical or related records that is normally filed together, and that can be evaluated as a unit to determine how long they should be maintained. Examples of record series can be found in the General Retention Schedule for County and Municipal Agencies.

The most common misconception about the inventory process is the amount of time needed to accomplish the task. This is due to a misunderstanding of the concept of a record series.

Consider a common record series like "correspondence." For records inventory purposes, there is no need to know who generated or received a particular letter or memorandum, nor what subject matter was discussed. It would certainly be a difficult task to sift through the files of even a small office if such information were needed. It is important to realize that such detail is not needed.

This is equally true for any other examples of record series held by government offices, such as purchase orders, travel vouchers, cancelled checks, personnel records, etc. In all cases, the records inventory is not concerned with the particular details of content.

The inventory process focuses on the general function and overall content of records. It also provides for the identification of record medium (e.g., paper, magnetic tape and floppy disk), size, filing method, reference rate, current volume and annual accumulation. All of this information should be noted on a Records Series Inventory form.

Inventory data is not used exclusively for retention scheduling. Such information becomes crucial to other aspects of managing records:

1. **Accumulation rates** are a factor in deciding whether to microfilm a record series,

2. **Filing methods** may illustrate problems with retrieval,

3. **Frequency of use** i.e., reference rates, will determine when to place records in storage.

Given the frequency with which data collection and processing requirements change, inventories and schedules should be reviewed every one to three years.

Division analysts usually conduct records inventories in local government agencies on a periodic basis and are always available to aid them in reviewing their record holdings, adding or deleting items from existing retention schedules or instituting records inventories for the first time. Brief planning and orientation sessions for agency staff, which summarize inventory techniques, procedures and benefits, are available at no cost. Sessions may be arranged by having a key staff member visit division offices or by having a records analyst visit agency offices.

Records Retention Schedules

After records are inventoried, they are placed on “records retention schedules.” Every record series on a schedule is:

1. Assigned an item number,

2. Given a title, a brief description of function and contents, including appropriate form numbers or applicable statutory references,

3. Given a retention period i.e., a specification of the length of time the record must be maintained, and in some cases, how long it may be kept in semi-current storage in a records storage center, and

4. Given a final disposition i.e., if the record will be destroyed, held permanently by the office of origin, or placed in an archives.

The scheduling process is ongoing and involves close cooperation between the division and appropriate officials. Many counties have designated officials responsible for the records management of their organizations. These officials work very closely with division analysts.

Most local government agency and authority records have already been placed on retention schedules by division analysts. These schedules consist of:

1. Specific schedules which list the record series that are unique to a particular, discrete subdivision of county or municipal government, e.g., airport, clerk, sheriff, et. al., and

2. The "General Records Schedule for County and Muncipal Agencies" which lists records that are common to most offices, e.g., correspondence, invoices, personnel files.

As new records and forms are created or received, division analysts and appropriate agency contacts should update retention schedules at the same time. For many local government agencies, records schedules are often established or amended when agencies begin using a new records storage center or request authorization for records disposal from the division. The division is continuously appraising county and municipal government records and revising retention schedules.

Schedules are also used as evaluation tools in files management, and microfilm system studies as well as in general office efficiency reviews.

Schedule Approval Process

Once a new or changed record series has been identified, division analysts evaluate the record series in terms of:

1. **Legal and fiscal requirements** — relevant statutory laws, regulations, statutes of limitation, administrative and court decisions, and audit requirements,

2. **Administrative requirements** — past precedents, usefulness in office management, and common sense, and

3. **Historical requirements** — evidence of significant actions or transactions affecting the public and worthy of permanent preservation.

Preliminary determinations of the length of time needed to retain records are based on these requirements. Division analysts submit a proposed schedule for review to the office maintaining the records as well as to offices whose authority and responsibilities bear on the matter.

Often, as part of the schedule review process, county and municipal professional associations provide additional advice. As of 1990, some of the local government professional associations involved with the schedule review process have been:

New Jersey County Clerks' Association	New Jersey Election Officials Association
County Jail Warden Association	State Association of County Adjusters
New Jersey Recreation & Parks Association	New Jersey Association of Planning Officials
Association of Municipal Assessors of New Jersey	Building Officials of New Jersey, Inc.
Municipal Clerks Association of New Jersey, Inc.	American Planning Association
New Jersey Institute of Municipal Attorneys	New Jersey Recreation and Parks Assoc.
New Jersey Society of Municipal Engineers, Inc.	Tax Collectors and Treasures Assoc. of N.J.

After a schedule is reviewed and agreed upon by officials, it is submitted for approval to the State Records Committee. The Committee consists of representatives of the State Attorney General, the State Auditor, State Treasurer, Director of Local Government Services in the Department of Community Affairs, and the Director of the Division of Archives and Records Management in the Department of State. This body has final authority on matters involving public records, regardless of the record's medium, i.e. paper, microfilm, magnetic tape, floppy disks, optical disk, etc.

The State Records Committee reviews proposed retention schedules at their regularly scheduled meetings. Meetings are attended by division analysts as well as representatives from county agencies and authorities.

State Records Committee approval ensures that retention periods satisfy all legal, fiscal, administrative and historical obligations, thereby protecting the public interest. The committee either approves a schedule as presented, recommends changes and approves with changes, or withholds approval pending further information.

Once a proposed schedule has been approved, it is signed by the Secretary of the State Records Committee, and becomes a legal, enforceable document that specifies the minimum amount of time a given record series must be held and indicates the manner of disposition after such a period has elapsed.

Schedule Publication

The division publishes the General Records Schedule for County and Municipal Agencies as well as specific retention schedules for individual offices; these are available upon request. Updates of individual schedules and new schedules are provided to the affected agency after all approvals have been secured.

Schedule Amendments

Records schedules are modified to reflect the changing information requirements of government. The process of changing an existing retention schedule is the same as the approval process for new schedules. Changes can include any component of a record series: title, description, retention period or disposition. Factors which may make revisions necessary include new legal, administrative, or fiscal requirements. Amendments are considered for any appropriate reason and can be initiated by contacting the division.

Records Disposition

Definition

Records can be disposed of in one of two ways:

1. **Physical destruction** — through shredding, burning, discarding or recycling, or

2. **Transfer of ownership** — through awarding custody to a proprietor other than the originating agency - e.g., a county archives, library or museum or the State Archives.

Authorization Process

In order to legally dispose of records, local government officials must fill out a “Request and Authorization for Records Disposal” form. The following information should be included on the form: record series title, item number, inclusive dates, retention period, and volume in cubic feet. Copies of the “Request and Authorization for Records Disposal” form are available from the division.

This form is legally required to document an official request for destruction by all state, county and municipal agencies. By signing and counter-signing this form, officials indicate their awareness of what they wish to dispose. This process ensures that records earmarked for destruction have outlived their value to the public.

All requests submitted to the division are checked against current records retention schedules. Each record series appearing on a schedule is keyed to an item number with corresponding title, description, and retention and disposition requirements.

Unusual or unique situations, such as unscheduled records, are resolved through the monthly cycle of State Records Committee meetings. Whenever an official discovers an unscheduled records series, the division should be notified to begin the scheduling process.

A majority of disposal requests submitted by state, county and municipal governments are checked, approved and returned within a week of their receipt by the division. For the remaining fraction, authorization is withheld pending further clarification. Some common errors that result in approval delays are:

1. **Omission of necessary signatures** — All requests for records disposal must be signed by two officials from the requesting agency in addition to the agency's auditor when applicable. On forms listing fiscal records, the law specifies acknowledgement by an auditor that fiscal records are not needed for future audits.

2. **Omission of microfilm certification letter** — On forms where paper copies of microfilmed records eligible for destruction are listed, the law requires inclusion of a guarantee that microfilming has been conducted according to minimum quality and documentation standards.

3. **Incomplete information** — Failure to provide inclusive dates, volumes to be destroyed, etc.

4. **Incorrect information** — Listing item numbers, record series titles, and retention periods which do not correspond to the appropriate retention schedule.

Remedying these errors is most often accomplished by telephone or by mailing omitted materials. In all cases where necessary signatures are missing from request forms, the forms are returned to the agency.

The “Request and Authorization for Records Disposal” form is printed in quadruplicate. After a request has been reviewed and granted, the white “original” is detached and kept permanently by the division. The pink “agency copy” is returned to the requesting office and should be maintained there permanently. The goldenrod copy is kept by the county's or municipality's auditor. Once approved and the records are actually disposed of, the yellow or “follow up” copy is mailed back to the division by the agency that initiated the request. This “follow up” copy documents date and method of disposition and is attached to the “original” held by the division. This process is required of all state, county and municipal government agencies and authorities.

The division’s review process ensures that minor errors are corrected quickly, loss of valuable documents is prevented, and that potential legal and fiscal predicaments are avoided. Without this standard, central authorization process, every agency would have to develop its own records destruction policy and procedure.

By complying with the statewide destruction authorization process, the liability for inconsistent or illegal records destruction is removed from the individual agency. The division is able to ensure the legal disposal of records on a statewide basis through this single procedure and form, with a fast turnaround time for approval.

Benefits of Compliance

By using mandated, statewide procedures for legal disposal of records, local government agencies and authorities gain a consistent policy with uniform standards. The benefits of systematic, legal disposition include:

1. **Economies --** Avoidance or savings in purchase and maintenance of real estate, equipment and supplies, staff time, and

2. **Efficiencies** -- Increases in efficiency and safety through the removal of unnecessary files.

Additionally, use of the statewide disposal process may settle many legal questions that may arise.

Liabilities of Noncompliance

Premature disposal — If records are destroyed before their retention periods expire, the public interest is potentially endangered because of:

1. Unplanned expenses of financial settlements or loss of revenues,

2. Disruption of efficiency due to gaps in information, and

3. Irretrievable loss of historical legacy.

Lack of disposal — Because records have a life span, there is a point in time in which they are no longer needed and their continued maintenance becomes a liability due to:

1. Unnecessary expenditures for real estate, equipment and supplies,

2. Lack of efficiency as old record accumulations become unwieldy and anonymous (see chapters on "Records Storage" and "Files Management"), and

3. Safety hazards because of lack of systematic storage and disposal.

Useless records become a burden in the same way as any waste product does. Noncurrent records are perhaps a more insidious waste because without records management, they are not identified and are given the same treatment as the current, valuable information needed to safeguard the public interest.

Summary

A records management program begins by conducting a records inventory to gain knowledge of holdings. Records may then be placed on records retention schedules.

Retention schedules summarize information about individual record series and designate minimum lengths of time records must be held in active and semiactive storage. Retention schedules also designate when and how a record may be disposed.

Timely and consistent records disposition results in increases in safety and efficiency and decreases in record keeping expenses. Use of the statewide disposal authorization process helps to eliminate inconsistent records destruction, thereby minimizing the likelihood of adverse legal, administrative, fiscal and historical impact.

Aiding local government officials and their staff with records management is the work of the Records and Forms Analysis Section of the division. The section offers advice to local government offices without charge. Records analysts are available to visit offices for on-site consultation. Analysts serve as a communication link between municipal and county agencies and authorities and the State Records Committee.

To obtain assistance, call the Bureau of Records Management at (609) 530-3200 or write: New Jersey Department of State, Division of Archives and Records Management, 2300 Stuyvesant Avenue, CN 307, Trenton, New Jersey, 08625.

Records Storage

Introduction

It is neither prudent nor possible to keep every record created or received within the confines of most offices. Office space should contain only those records necessary for conducting daily business effectively. Alternative methods of storage are needed for the maintenance of records which must be kept for administrative, legal or fiscal reasons, but are not referred to regularly — i.e., semi-current or inactive records. This is the work of a records storage center and its staff.

The frequency of record use by an office determines its activity, and consequently its storage and retrieval requirements. Determining reference rates is a key task in developing plans for records storage. This information is usually generated by a records inventory.

For records management purposes there are two definitions of records activity:

1. **Current or active records** — reference rates are greater than one per month per cubic foot.

2. **Semi-current or inactive records** — reference rates are less than one per month per cubic foot.

In addition to determining the rates of reference, measuring the volume of record holdings is essential for both current and future space requirements. It should be noted that for these purposes, approximate measurement is sufficient. A standard legal file drawer contains about two cubic feet of records, and fractions less than half a cubic foot are designated as “minimal” (see "Table of Volumes" at end of this chapter).

Records Storage Objectives

Low-cost maintenance and protection of semi-current records is the goal of records storage techniques. When used as part of a comprehensive records management program for local government government, a records center provides:

1. Orderly periodic transfer and storage of records which must be retained for limited retention periods but have low reference rates,

2. Standards for indexing, transferring and controlling semi-current records, and

3. Fast, efficient retrieval services, generally with a turnaround time of 24 hours or less from receipt of reference request to delivery of records requested.

By using a records storage center, a local government government will be able to save thousands of dollars per year, chiefly through economies in space and equipment. For example, when records are housed in office space in standard five drawer vertical file cabinets, one square foot of storage space is needed for each cubic foot of records. (With these cabinets, reference space requires an additional square foot for each cubic foot of records.) When records are stored on steel shelves in a records center, that ratio is increased to a minimum of five cubic feet of records to each square foot of floor space. Space economy is further increased when costs for inexpensive "warehouse" storage are compared with expenses for prime office space.

Records Storage Process

Primary Concerns

Use of a records storage center provides two essential services for county and municipal agencies and authorities:

1. The first service is protection against damage or destruction from:

    a. **Fire** — Losses from accidental fire or arson are minimized by prohibiting smoking and segregating combustible materials. Additionally, fire codes may require installation of automatic sprinklers, smoke detection systems, fire doors and walls, and electrical wiring in metal conduit. General periodic building and fire inspections are also recommended.

    Unlike the usual, slapdash storage, a properly-run records storage center contains only semi-current records, not the common mix of active and inactive records in varying degrees of anonymity, used office furniture, etc.

    b. **Pests, vermin and pollution** — The organic substances in leather, pastes and paper are a good source of food for vermin. Accumulated dust and debris provide a haven for the growth of insects and mold. Prevention measures depend upon the nature of the pestilence and should include keeping the building clean, as well as conducting periodic exterminations and installing filtration for insects and fungus spores, if needed.

    A properly run records storage center is a clean, well-kept facility, in which records are repeatedly spot-checked during the process of accommodating reference requests.

    c. **Temperature and Humidity** — Extreme fluctuations of temperature and humidity will hasten records deterioration. Periodic inspections of the storage facility should include monitoring for plumbing leaks, standing water and excess humidity. Records storage boxes should be examined randomly for mold, infestation, or other signs of deterioration.

    A properly run records storage center provides constant office-type temperature and

humidity and is environmentally monitored.

2. The second service is the safeguarding of privacy and security:

   a. **Access Authorization** — Semi-current records stored in a records storage center are the property of their office of origin. Only physical custody is transferred to the storage facility, and permission from the originating agency is required before anyone can see the records. A form listing persons to whom records may be released, such as the division's "Records Center Access Authorization Form" must be filed by appropriate officials before records center staff will comply with a reference request.

   b. **Theft Prevention** — Semi-current records vary in thier accessibility. Some records are sensitive and highly confidential. Special means of securing these records, such as the installation of burglar alarms or other instrusion detection systems may be necessary. Other means of preventing burglary losses include installing separate locks on all doors to the storage area, monitoring access through staff supervision, and employing uniformed guards if necessary.

      A properly run records storage center is usually a guarded building with strictly enforced access procedures described above.

Records Transfer

The identification of semi-current records held by government offices is another benefit of having conducted a record series inventory. The inventory process identifies record holdings and their inclusive dates, volumes and rates of activity, thereby making possible the establishment and implementation of retention schedules. Retention schedules provide the basis for semi-current records storage and allow for ease of legal disposition.

Storage Criteria

To store records at a records storage center, records must:

1. Appear on an approved Records Retention Schedule,

2. Be scheduled for a minimum of one year storage,

3. Be properly identified and documented for transfer and reference,

4. Be properly packed in standard, 1 cubic foot records storage boxes, and

5. Have a specific date (month and year) when disposition will take place.

The "Records Storage Center Criteria and Instructions for Transfer of Records" contains this and other information, including a item-by-item guide to completing an actual records transfer request, and may be used as a model for a county or municipal form.

Certainly, not all records should be transferred to storage. Reference rates, retention periods and storage costs are prime factors in determining the appropriateness of semi-current storage. Current records must remain in office space because they are crucial to daily business, with only one prior years' records normally needed for efficient operations. Additionally, some semi-current records should be kept in office space because volumes are minimal and transfer would be too costly, or because paper source documents are microfilmed.

Additional analysis of records targeted for transfer to local government records centers is often suggested to determine whether microfilming should be used instead of semi-current storage. Factors included in such an analysis are:

1. Length of retention period,

2. Volume and access rates,

3. Security and preservation considerations, and

4. Cost effectiveness.

In all cases, division analysts are available to help study potential storage or filming applications.

Because their storage requirements are considerably more complex, permanent records are never eligible for transfer to a records storage center. Permanent records should be placed in an archives as soon as they become inactive in their agency of origin (see "Archives" chapter). In counties where economic constraints require a single facility to house semi-current and permanent records, permanent records should be segregated to accomodate a higher degree of enviornmental control.

Preparation for Transfer

Semi-current record series are packed in standard records cartons in the order in which they were filed in their office of origin. To make reference easier, approximately one and one-half (1 1/2) inches of space should be left in every box. All of the records, whether letter or legal size, should be packed parallel to the long (15 inch) side of the carton so they will be perpendicular to the front of the shelf when stored. In case of fire, this packing method prevents records from falling out of the boxes and feeding flames. Additionally, records that are packed correctly may survive a fire with only minimal singeing of edges.

At the time the records are packed, a “Records Transfer Request” form should be used to itemize the contents of each box. This serves as both documentation of the transfer to a records storage center and later as an index for physically locating specific records for reference.

Each storage box must be labeled by the originating agency. In a properly run records storage center, the Records Transfer form be submitted prior to physical transfer of the records to permit processing. Once received, box numbers assigned by the originating agency become a secondary index. In an informal records storage system, the same form should be used with a staff member from the originating agency completing all the steps.

Receipt by the Records Center

Responsibility for physically moving records from their offices of origin to a records storage center belongs to the records center staff, provided that appropriate prerequisites have been met, and procedures have been consistently followed. Once records arrive at the records center, the general contents are checked against the records transfer list to ensure that records listed were received.

Records center staff provides a final label for each box with an assigned physical location in the records center along with the disposition date. Boxes are then placed in appropriate shelf spaces. The new label replaces the preliminary label of the originating agency. Records center location numbers are added to the records transfer list for each box and a copy of this amended list is returned to the agency. Once the agency receives the list, it becaomes a receipt of the successful transfer, as well as an index when specific records are needed. It should also be noted that the disposition dates of records are checked for accuracy by records storage staff at the time of the receipt of a transfer request.

Unlike a central file room which is essentially a self-service operation, a records center enjoys a staff which is responsible for overseeing procedures and providing services. The decision to implement a formal system is made by considering the costs of implementing and maintaining the system versus the cost benefits of storing semi-current records properly. A records center staff of trained, experienced technicians perform a range of services including:

1. Records pick-up from agency or authority premises,

2. Records preparation (i.e., preparing records for storage in a records center, including indexing, preferably on an automated storage system),

3. Retrieval and reference for records stored in a county or municipal records center (restricted to authorized agency representatives only), and

4. Destruction of records whose retention periods have expired, after review and approval by appropriate agency or authority officials.

Although less formal arrangements may not inspire the confidence needed by various officials to use the system to full advantage, if it is economically necessary to scale down a records storage operation, at the very minimum, storage policies and procedures should be published and disseminated to avoid confusion and demonstrate management support for storage initiatives.

Reference Services

Records storage centers generally provide reference services which include both retrieval and delivery of records to authorized officials who request them. Information may be relayed by telephone, or photocopies of a few pages may be mailed or faxed. Additionally, most off-site centers include reference rooms where records may be examined in person. Photocopiers are also standard equipment since an authorized official may need to see a particular record but prefers the security of leaving original documents in storage.

A records center has physical custody and is responsible for maintenance and protection against damage or unauthorized access. The transferring office retains legal custody or its own records

and controls use and access. That office must therefore regularly supply and update a list of authorized employees who may make reference requests. No other individuals are given information about the records in storage. It is the duty of records center staff to determine if an individual is authorized before releasing any information.

Whenever a file is removed from the storage center, an “out” slip (or a carbon of the “Request for Reference Services,” or some similar control device) is entered in its place to mark:

1. Records removed,

2. Date of removal, and

3. Official to whom records have been delivered.

This system documents each reference request and tracks withdrawn records. When records are returned to their locations in the records center, the “out” slip is removed and amended by indicating the date of return to the file. It is a virtual certainty that such care is very seldom given to those records that are not stored in this fashion.

Disposal Procedure

Records center staff periodically reviews box transfer lists to determine if disposition dates are imminent or if any records are being held beyond their retention periods. Records storage staff also checks current records retention schedules to determine if they have been updated and if an item in storage is affected by the change. Disposition dates of series held in storage are also verified.

From information gathered during these reviews, the staff can send notices to appropriate agencies and authorities describing the cartons of records eligible for destruction, circling the items on photocopies of the original transfer request and providing a partially filled-out, four part “Request and Authorization for Records Disposal” form.

The office of origin need simply verify which records are earmarked for destruction, provide appropriate signatures, and remove items it considers as necessary for continuing business despite expiration of retention. After the signed, intact disposal request is sent to the division and the division grants authorization, targeted records may be removed from semi-current storage to be destroyed. A record center's files, as well as those of the office which had custody of the records, are updated to reflect changes in record holdings.

Records center staff arrange for the destruction of such records in accordance with state environmental restrictions with special care taken in those instances where confidential or sensitive records are being handled to prevent the release of their contents to unauthorized individuals or agencies. This procedure involves a certification by vendors that records picked up will be destroyed or recycled in accordance with the law.

Developing Storage Options

There are five basic approaches to developing facilities to house semicurrent records:

1. **Design and construct** a new building for the purpose,

2. **Convert** an existing building,

3. **Retrofit** an area within an existing building,

4. **Lease** "common" storage space from a commerical storage facility, or

5. **Contract** a service company which specializes in the storage, maintenance and retrieval of semicurrent records.

Choice of an approach is not only determined by the total volume of records and estimating future growth of active files, but also after careful consideration of costs versus cost avoidance benefits, budgetary levels, design and operational factors. Seemingly expensive options such as new construction often become economically justifiable if two or more public entities which require buildings can be compatibly combined. In some areas of the country, archival and records management services are provided by regional facilities which serve several municipalities and counties.

Division analysts are available to aid counties with needs assesments for semi-current storage systems, and to provide sources of comparative data. Advice is always available, either officiallly or on an informal basis as questions arise.

New Construction

General Considerations

A building specifically designed and constructed for use as a records storage center provides the best use of space for optimum control over records. The National Archives and Records Service has published specifications and standards for its facilities (Federal Archives and Records Center Facility Standards, General Services Administration, 1976).

A building constructed for semi-current records storage must be located within a reasonable distrance from most of the offices it serves for ease of transfer and reference. The building should be designed to guard against dangers such as fire and flooding, as well as to ensure protection against unauthorized access and hazards such as insects, vermin, and extreme humidity and temperature fluctuations.

Facility size is determined by the space needed to accommodate existing semi-current record holdings and to adequately provide for future expansion. In addition to area needed for storage itself, space is required for offices, receipt and processing of records, on-site reference, and appropriate employe service areas. It is extremely important to ensure that the floor of the building

is capable of safely carrying the weight to records, shelving and equipment, and people. The National Archives and Records Service recommends a minimum live floor load of 300 pounds per square foot, with 100 pounds per square foot minimum for office areas.

The facility must be well-lighted and adequately ventilatled, with windows kept to a minimum or covered to protect records from sunlight. Fluorescent lighting is preferred to avoid glare, shadows and extreme contrasts. Lighting fixtures should be placed high enough so they do not interfere with loading and unloading of shelves.

Loading docks for receiving records and dock leveler plates to accommodate a variety of trucks are recommended. Other construction options include separate receiving and disposal areas to minimize the risk of destroying inappropriate records.

Shelving

When circumstances permit, a records storage center should be limited to one level. The traditional records center shelving is 14 feet high and accessed by rolling ladders. With this configuration, an average ratio of five cubic feet of records per square foot of floor space can be achieved. If no ladders are used, shelving height is limited to 7 feet-6 inches to permit access. This limits storage density advantages.

Where open land is unavailable, records storage centers have been built using multi-level shelving configurations. Up to three levels of 7- 8 foot shelves are separated by catwalks. Access to records is made easy with the use of stairs, elevators or hydraulic lift devices. Multi-level shelving arrangements can attain ratios of up to nine cubic feet of records per square foot of space.

Standard steel shelves measure 42 inches by 30 inches and accommodate six standard cardboard record cartons which are each 12 inches wide, 15 inches long, and 10 inches high, holding an approximate volume of one cubic foot each. Shelves are arranged either in single rows with all cartons facing an aisle, or double rows with only front cartons on each shelf facing an aisle. The double row, or back-to-back arrangement, makes better use of floor space while maintaining accessibility.

Usually, there is only one main aisle, which should be six to eight feet wide, to allow for ease in moving records and equipment. Aisles between rows of shelves should measure 30 to 36 inches in width. Open space must also be preserved around elevators and stairs to allow freedom of movement.

Mobile shelving configurations are not recommended as viable options for ordinary storage needs because implementation and maintenance can be far more expensive than conventional configurations. Moreover, mobile shelving requires greater floor load capacity, and it creates access restrictions which do not occur with standard configurations.

Sometimes, a government entity will choose to convert an existing building or retrofit an area within an existing building, and consequently floor space may be severely limited. In such a case, moblile

shelving configurations can be considered.

Equipment

Equipment used within a records center can include but it not limited to, hand trucks, carts, conveyors, fork lifts, elevators, ladders and hydraulic lifts. Rubber wheels reduce noise and minimize wear on the floor, especially on catwalk grating. Equipment type depends upon a buidling's physical characeristics and shelving configuration.

Standard, cubic foot records cartons make the best use of shelf space and provide for ease and safety in handling. All specifications provided for shelving and space ratios involve use of standard cartons. It is not recommended that public agencies use any other carton. Transfer file boxes, or transfiles, can be expensive and excessively heavy and, because of their design, they cannot be stacked safely without collapsing or compressing.

Building Conversions

While most of the concerns of converting an existing structure into a records storage center are identical to those of new construction (see page 7), a few require added emphais. Counties considering converting a building should:

1. **Secure a stress test** of the floor by a competent engineer,

2. **Study original and existing floor plans** to determine the feasibility of the conversion, and

3. **Estimate total costs** of conversions and compare costs of other options.

Retrofitting an Area of a Building

These concerns are the same as those indicated in the conversion of an existing building. This option is primarily recommended for smaller counties with low volumes of records. However, the creation of records storage areas should only be undertaken after a county or municipality has projected its growth rate and estimated a reasonable rate of increase for its records, so that the costs of retrofitting are not spent unnecessarily due to a future need for construction.

In some cases, the basic benefits of semi-current records storage can be accomplished by minimal retrofitting:

1. **Removal** of semi-current records from prime office space, and

2. **Transfer** in numbered records center boxes to random storage on steel shelves in a suitable space in a existing government building.

The major concern of such a minimal arrangement is to ensure that the care given to semi-current records is sufficient to provide for their continuing protection and ease of reference. This includes security form fire and flood. Local governments should be assured that records storage yields

savings of tax dollars and improvements in safety and efficiency regardless of the current volume of their record holdings, and irrespective of its size or number of employees.

Leasing "Common" Commerical Storage Space

Another minimal arrangement to provide semi-current storage is to simply lease "common" commercial storage space. This is probably the least effective of all of the options since it requires the use of space that is not designed for economical records storage nor for efficient retrieval. As such, it is most typically used as a temporary storage option pending construction or retrofitting of a permanent space. Moreover, because of its disadvantages, this is usually the most labor-intensive of the storage options, and the most likely to encounter severe problems.

Contracting a Service Bureau

Use of a commercial records storage firm can provide a local government with an option for storing its semi-current records without the expenses of design and construction, and consequent needs to equip, maintain and staff a facility. As with any consideration to use a private vendor for services, counties must examine their long-range costs and budgetary levels, project their rates of growth in active
files and compare alternatives.

Contracting with a commercial firm to transfer semi-current records out of office space can secure economies in space and equipment usage and may be preferable to no form of records storage at all. However, using a private service company may only be a cost-effective alternative if a local government is certain that its reference rates will be minimal. Although private storage services generally charge very little for storage itself, they do charge extra for all other services, e.g., trucking, receiving, handling, reference, and destruction.

In fact, it is possible to spend much more money for a year's reference charges than for annual storage. Given these considerations, other methods of records storage will probably be more economical in the long term. Division analysts are available to assist in developing guidelines for such vendor services and to aid in evaluating vendor proposals.

Summary

Records storage is made possible by the successful completion of records inventories which identify records, their accumulations, locations and rates of activity. Inventories, in turn, form the basis for records retention and dispostion schedules. Retention schedules designate when a record may be transferred and disposed.

Once records are identified as semi-current, i.e. referred to less than once per month per cubic foot, they are placed in standard records boxes. Standard cartons hold approximately one cubic foot of records, weigh between 30-35 pounds, and are packed to maximize space, allow removal for reference and minimize chance of spills.

Records are then transferred to a semi-current records storage system -- i.e., a records storage center that uses a centralized, indexed procedure of numbered, randomly-placed, standard cartons on steel shelves. In the preferred, formal arrangement, county storage center staff screen requests for access and provide reference services to duly authorized officials. Such services include prompt delivery of originals or duplicates of requested records, as well as telephone or fax service when appropriate. In an informal arrangement, current staff are responsible for semi-current storage in addition to their other duties.

Storage is accomplished by constructing a new building, converting an existing building, retrofitting an existing area, leasing "common" commercial storage space, or by contracting with a vendor.

Timely and consistent trnasfer of appropriate semi-current records to storage results in economies in costs for real estate, equipment and supplies, as well as in increased efficiency in active files management. Aiding county officials and their staff with records storage considerations is the work of the Records Storage Section of the division. The section offers assistance in semi-current records storage to county and municipal governments.

To obtain assistance, call the Bureau of Records Management at (609) 530-3222, or write: New Jersey Department of State, Division of Archives and Records Management, 2300 Stuyvesant Avenue, CN 307, Trenton, New Jersey, 08625.

Archives

Introduction

A fundamental yet often neglected obligation of government is to care for its historical records. Local public records can provide crucial evidence for understanding the basic organization of society, and their identification and maintenance is the responsibility of each county that generates or receives them.

When cared for and arranged using appropriate techniques, the documents, photographs and magnetic tapes that document the history of county government can be preserved permanently.

The term “archives” can have three basic meanings:

1. The noncurrent records of individuals, public agencies or private organizations which are preserved because of their permanent legal, fiscal, historical or aesthetic value — **the archival records,**

2. The administrative office or agency responsible for systems and procedures used to maintain and exhibit archival records — **the archival agency,** and

3. The physical building or repository, equipment and supplies necessary to house archival records under specified environmental conditions, **the archival facility.**

Objectives of an Archives

The objectives of an archives are to secure the transfer of inactive records which have permanent value and to provide for their preservation in an environmentally controlled facility that permits reference access.

The Process of Managing an Archives

Because archival records originate from many offices within a county, it would be most efficient for a single office, with appropriate staff and expertise, to maintain permanent records in a single location. Governing bodies should establish a new office or designate an existing office to be responsible for all county archival records.

Given the constraints on county resources, Boards of Freeholders should weigh options for establishing an archives with due consideration of costs and budgetary levels. Some possibilities

include:

1. Designating an existing office and a current staff member to be responsible for archival records. It is important that the designated staff member be able to bear any additional work which arises because of new responsibilities, and be given training opportunities in basic archival techniques.

   County offices which can be considered are:

   a. **The County Records Manager** -- the foremost choice, records management is already responsibile for active files management, semi-current records storage, and image-processing. Furthermore, since many records management programs grew up from archives, greater rapport and a professional support system is an advantage.

   b. **The County Clerk's Office** -- usually the best choice in the absence of a professional records manager, the Clerk's Office is another central agency with considerable experience in managing records.

2. Creating a new office and hiring a full-time staff member to protect and preserve permanent records. (If no central records management office exists, a new county records manager/ archivist could be responsible for county records from their creation through their preservation or destruction.)

   Depending upon the administrative size of a county, and the volume of its permanent records, the new office can be:

   a. Established within a county to exclusively serve all county offices including the judiciary, or

   b. Established as an intergovernmental agency which serves all county offices as well as municipalities within a county (perhaps on a charge-back basis), or which serves two or more counties, etc.

Regardless of how a county archives is established, it must perform five basic functions: appraisal, accessioning, processing, and storage of inactive, permanent records, as well as reference services for the public.

Records Appraisal

Public records document the actions and transactions of government and must be retained for various lengths of time in accordance with administrative, legal and fiscal requirements. As a general rule, only three to five percent of an agency's records will have permanent value to the organization. Routine appraisal decisions have been greatly simplified by the development and publication of general and specific records retention schedules for use by state, county and muncipal agencies and authorities.

As provided by the Destruction of Public Records Act (1953), the State Records Committee is

responsible for records retention schedules for New Jersey's public sector. Retention schedules determine the minimum amount of time a record series must be maintained to satisfy administrative, legal, fiscal and historical requirements, even when such requirements indicate that a record is designated for permanent retention. When such records are no longer needed by the office that created them, the county archives can proceed with accessioning.

In some instances archival officials may want to preserve a record permanently, even though its retention schedule allows for eventual destruction. For example, correspondence is generally scheduled for destruction after three years, but the correspondence of a particularly important officer — a county executive, for example — may be worthy of permanent retention because it provides important insights into the history of county government. Because of these considerations, county archivists should review any records destruction requests. Through the records disposal process monitored by the division, the State Archives may elect to review and appraise some county records in order to ensure that important historical evidence of value to the entire state is not being overlooked and destroyed.

In other instances, disposition may be listed as "archival review." In such cases, archival officials, in cooperation with the county office that created the records, apply the principle of "intrinsic value" and use their best judgment to determine value. Records have intrinsic value when their age, physical form or other characteristics makes them valuable for reasons other than the information they contain. These records should be preserved in their original form. Records without intrinsic value, on the other hand, can be destroyed after being microfilmed or otherwise reproduced.

In general, archival officials carefully balance the need to preserve records of enduring value against the limits imposed by storage and personnel costs. Since records retention schedules only designate a minimum amount of time that records must be kept, county agencies and authorities are free to preserve records for as long as they want.

On the other hand, indiscriminate retention of records wastes tax dollars through excessive storage and maintenance costs (see section III), and defeats the purpose of comprehensive records management. Assistance in determining archival value of records is available by contacting the Bureau of Archives and Records Preservation of the Division of Archives and Records Management.

Accessioning

After records have been identified as permanent, their accessioning, or transfer into the physical and legal custody of an archives, may occur. Records transferred to an archives become the permanent legal responsibility of the archives. ***This transfer of legal custody is a major distinction between an archives and the records storage center.*** In a records storage center, only physical custody passes from the agency of origin; ownership is not affected. The originating agency may request the return of its records at any time, and it alone controls access to those records.

Records transferred to an archives are never returned to the agency of origin. Access restrictions that may be considered necessary for archival records must be mutually agreed upon by the originating agency and the archives prior to transfer. County government offices releasing custody of their permanent records to an archives should be aware of these distinctions.

The accessioning of records into the custody of a county archives should be documented by an "Accession Record" form which contains:

1. A statement indicating the retention schedule or criteria used in selecting specific material for permanent storage in the archives,

2. Identification of the office of origin,

3. Record series title(s),

4. Inclusive dates (or date span),

5. Volume in cubic feet,

6. Internal arrangement of files, including a note on their condition,

7. A brief summary of the informational content of the files,

8. A brief description of any finding aids, e.g. indexes and inventories, that may pertain to the records,

9. A brief statement of any access or use restrictions which may apply to the records, and

10. A statement acknowledging transfer of legal custody of the records to the county archives.

This form must be signed and dated by an authorized official of the transferring office and an authorized representative of the county archives.

Processing

Archival records deserve special care and attention to assure their preservation and usability. Processing of records accessioned into an archives involves four basic operations: preliminary inspection, arrangement and sorting, description, and conservation — i.e., preservation or restoration. A brief outline of these operations follows:

Preliminary Inspection

When records are ready to be accessioned, they should be checked for the following:

1. Are any of the records in urgent need of repair or treatment for water damage, mold or vermin infestation?

2. Are there file folders? Do the file folders need to be replaced with acid-free archival folders?

3. Are folder labels intact and self-explanatory?

4. Are the records arranged in some logical fashion?

5. Does the accession contain any material which is ***not*** archival: duplicate copies, nonpermanent records, printed reference materials, and extraneous matter?

6. Is there an existing finding aid -- index, inventory or list that will permit easy reference to the records, or will one have to be created?

General answers to these questions should have been noted while completing the accession record form. The concerns identified during this inspection can be used later in setting priorities for further processing.

Arrangement and Sorting

The primary principle of archival arrangement is to maintain the order of records as received from the office of origin. Such treatment allows records to reflect most faithfully the organization, functions and actions of the agency and officials that created them. By avoiding an arrangement which introduces extrernal considerations, archival arrangement minimizes interpretive bias and allows a body of records to speak for itself.

The records of each office (County Clerk, Surrogate, Public Works, etc.) should be kept separately, constituting a record group. Records of administrative units within a major office may be filed as subgroups, and individual record series, as listed in appropriate retention schedules, should be arranged under the subgroups. Records must also be sorted to eliminate extraneous materials such as duplicates and nonessential printed material.

Description

Archival records should be briefly described so that users can more readily understand their contents. Such a description normally involves creating a finding aid or inventory, if one does not accompany the record series when it is transferred by its agency of origin. An inventory includes a brief history of the agency that created the records, as well as a summary of the kinds of information found in each record series and the order in which the records may be found. Agency representatives may be of assistance in preparing descriptive inventories, and their aid should be enlisted whenever possible.

Conservation

Although most county records are in acceptable condition and are maintained with diligence, some records may be subject to adverse conditions which hasten deterioration. Conservation of permanent records is therefore a continual concern.

Treatments must be applied to records that are brittle, torn, tattered, taped, infested or otherwise damaged. Moldy or insect-infested records must be segregated from an archives to avoid contamination of other records. Routine inspections of permanent records still housed by the originating agency can detect potential problems and suggest appropriate remedial steps needed prior to transfer to a county archives. Restoration of damaged permanent records before they are placed in archival storage minimizes deterioration of permanent collections, and helps ensure longevity. Proper storage is also crucial to the preservation of permanent records.

Whenever the need for conservation or restoration arises, county officials should call the division of contract with a private vendor. Some conservation techniques include, but are not limited to:

1. **Care of leather bindings** -- includes cleaning with chemical solutions, and dressing with an oil mixture, or rebinding where applicable,

2. **Paper surface cleaning** -- with powdered erasers or block erasers,

3. **Encapsulating documents** -- in mylar or other polyester film,

4. **Preservation microfilming** -- filming older, deteriorating documents as a means of generating durable working copies for researchers as well as archival master copies for permanent storage, (see section V) and

5. **Deacidifying manuscripts** -- neutralizing acidic paper by applying chemical solutions to prevent deterioration.

Conservation techniques require knowledge and experience in order to ensure that their application does not unwittingly hasten deterioration. For example, mending a torn page with common adhesive tape complicates the problem of permanent preservation by permeating the paper with acidic adhesives that eventually break down, staining and weakening the taped area and eventually destroying the document.

Storage Requirements

Because archival records have been selected for permanent preservation, extraordinary care must be taken with handling and storage. The continuous interaction between a record's medium — paper, magnetic tape and film, and the environment in which it is kept — temperature, humidity, light, and air quality, determines the rate of records deterioration.

Archival records must be kept in a manner that protects them form the principal hazards of:

1. **Excessive fluctuations of temperature and humidity** — High ranges of heat and humidity cause film emulsions to soften and magnetic tapes to become unstable. When high temperatures are combined with high humidity, conditions become ideal for microorganisms, insects and vermin, staining and other adverse chemical reactions in paper and leather. Moreover, fluctuations of temperature and humidity put stress on paper, bound materials and film emulsions by causing these materials to swell and contract with each climatic cycle. The potential damage to permanent records are broken bindings, brittle paper and unreadable film.

   Preventive measures include installation of ventilation and heating ducts, air conditioners or dehumidifiers to remove excess moisture from the air and keep the relative humidity of archival storage areas within a range of 45 - 65 percent, and temperature between 65 - 70 degrees Fahrenheit, plus or minus five degrees, year round.

A battery-operated instrument called a psychrometer should be used from time to time to monitor humidity within the archives, and repository surveys should be completed during these periodic inspections.

2. **Infestation by insects and vermin** — The organic substances in leather, pastes and paper are a good source of food for vermin. Treatment will depend upon the nature of the infestation. Regular visits by an exterminator may also be necessary if the archives is prone to infestation. Preventive measures include periodic inspections of the facility and the records. Yet perhaps more importantly, problems can be prevented by thoroughly examining records when they are accessioned, prior to their placement in the storage stacks.

3. **Contamination by dust and other airborne impurities** — Dirt and dust pose a long-term hazard to records. Accumulated dust and debris can soil books and papers and provide a haven for the growth of insects and mold. Also, airborne pollutants eventually corrode record materials. In a storage area with high temperature and humidity, sulfides and nitrates from automobile exhaust can convert to sulfuric acid or nitric acid which destroy paper and leather.

   Control measures include keeping floors swept, and shelves, books and boxes dusted or vacuumed. Other steps include installing air filters in heating or cooling ducts and placing dehumidifiers where needed.

4. **Excessive or improper handling** — Permanent records must be handled with the utmost care at all times. In many cases, fragile or damaged original records can be preserved by microfilming to archival standards and using microfilm copies for research use. Also, the presence of food, drink and smoking can be severely deleterious, and must be strictly prohibited in storage and reference areas.

5. **Fire** — Damage by accidental fires or arson can be a much greater risk in office space where smoking may be allowed in certain areas and combustible material is stored near permanent records.

   Fire codes may require installation of automatic sprinklers, smoke and heat-detection systems, fire doors and walls, and metal conduit for electrical wiring. General periodic building and fire inspections are also recommended.

6. **Theft** — Burglary losses of permanent records can be much greater in office space where there is no special recognition of the security needs of archival records. Such losses can be prevented through controlled access with separate locks on all doors to the archival facility, and installation of burglar alarms and other intrusion detection systems. Other security measures govern patron use of reference areas.

Related concerns for providing county government records with security against various forms of deterioration or destruction are addressed in the Records Storage section (see III) and Vital Records section (see VII). It is important to note once again, however, that because archival records are permanent, their storage requirements are considerably more complex.

Office files and other unbound, archival materials, should be stored in standard letter-size or legal-size acid-free containers available from archival suppliers. Rubber bands, paper clips, file folders

and other foreign objects should be removed from the files. Large records may be stored in special oversize containers or wrapped in acid-free paper and stored flat on shelves or in horizontal map cases. Bound records may be stored vertically, unless size (more than eight inches), or damaged bindings dictate flat storage. Boxes and shelves should be labeled according to the record group, subgroup and series of materials they hold.

Reference Services

An area of an archives should be designated to allow the public to use the records. Ideally, such an area should be close to the storage facility for easy access, and should be open to the public during regular business hours.

Reference services provided to researchers consist chiefly of answering questions about the basic content and availability of records, and retrieving records from the storage area for examination by patrons. Archives staff should not conduct extensive research for any patron.

To minimize the risk of damage or theft, use of archival records must be strictly monitored. The archives should keep a daily register of all visitors. In addition to restrictions governing handling of records in storage areas, researchers should be forbidden to use pens or to place their briefcases or other containers on or near research tables. Also, patrons should never be allowed to remove records from the search room or transfer them to other researchers.

Transfers to the State Archives

Counties may sometimes request transfer of their permanent records to the State Archives. The Bureau of Archives and Records Preservation will accession local records on a selective basis provided that they have statewide significance. Such records become permanent state property and are maintained in the State Archives. It is important to note that N.J.S.A. 47:2-3 requires transfer of certain municipal records, such as those generated by extinct municipalities, into the State Archives.

Summary

Archives should be established by county governing bodies to provide for the permanent preservation of records of enduring historical value.

The process of managing an archives begins when archivists select records worthy of permanent preservation. Decisions to permanently preserve records are based upon an appraisal of their value as historical information or evidence, or because of their intrinsic value, i.e. their age, physical form or other characteristics that requires preservation of originals. This process has been simplified by the publication and updating of records retention schedules that designate permanent records and indicate other records which should be reviewed for placement in an archives.

The originating agency transfers ownership to the archival agency with proper documentation. Once accessioned, records are processed: they are arranged and described by inventories or finding aids and are inspected to determine conservation or restoration needs. Finally, records are securely stored in an environmentally-controlled facility to minimize deterioration, thereby insuring preservation while providing controlled reference access to the public.

The division offers assistance free of charge to county agencies and authorities. For information or assistance, call the Bureau of Archives and Records Preservation at (609) 292-6260, or write: New Jersey Department of State, Division of Archives and Records Management, 185 West State Street, CN 307, Trenton, New Jersey, 08625.

Micrographics

Introduction

Microfilming can be a reliable, cost effective means of managing information resources. Briefly stated, microfilming involves the recording of microimages, or miniaturized documents, on photographic film. Microfilm can be used in a variety of information management systems, from simple records storage and retrieval applications to complex configurations involving computer output microfilming.

In New Jersey, microfilm is accepted as a legal substitute for original paper documentation (N.J.S.A. 47:3 et seq.). Consequently, most categories of paper records can be destroyed after microfilming in accordance with required procedures. It must be stressed, however, that the legal acceptance of a microfilmed record depends upon adherence to the statewide microfilm standards published and monitored by the Division of Archives and Records Management (see Appendix A). These standards address the legal certification of microfilm, quality control and archival requirements. Technical, economic and administrative factors must also be considered before implementing a microfilm system.

Objectives of a Micrographics System

Micrographics systems are designed to provide for effective, economical management of records through achieving one or a combination of the following general benefits:

1. **Space Savings** — Document storage space requirements can be reduced by as much as 98 percent with the use of microfilm. This can free valuable office space for more productive uses and help reduce filing equipment expenditures, provided that no viable and cost-effective alternative is available.

2. **File Integrity** — Because microfilmed documents are fixed in sequence, misfiling and loss of individual documents is greatly reduced. When combined with manual or automated index systems, microfilm applications offer one of the best means for effectively maintaining file arrangement and order.

3. **Security** — Microfilm can be duplicated inexpensively. This allows for the low cost retention of security copies of important or vital records at an off-site location. If the original copies of sensitive records are lost or destroyed, duplicates can be made from security film. Moreover, because the documents are placed on film, tampering can be detected more easily.

4. **Quick and Effective Retrieval** — Microfilm generally provides quicker, more accurate access and retrieval of documents than bulky paper-based systems. This is true even for the most basic microfilm formats. When combined with computer technology, microfilm forms the basis for a sophisticated image retrieval system which provides access to individual documents within seconds. Microfilm reader-printers also allow the production of full-size paper copies of microimages when needed.

5. **Preservation** — Documents that have historical or long-term retention value are often too fragile for daily use. The filming of older, deteriorating documents provides a means of generating durable working copies for researchers as well as archival master copies for permanent storage. This eliminates excessive handling of the original documents and helps prevent further deterioration.

Converting recorded information from paper to microfilm can be an extremely effective means of managing records. However, serious difficulties can arise if a micrographics system is chosen and implemented without general awareness of the technology and without a basic understanding of the records system being served.

The Bureau of Micrographics and Alternative Records Storage publishes technical filming specifications, approves microimaging systems, and oversees compliance with production standards. The bureau responds to requests for guidance in purchasing, contracting and managing microfilm and computer systems. The bureau also assists agencies in determining the feasibility of alternative and supplemental image processing systems including Computer Assisted Retrieval (CAR), Computer Output Microfilm (COM), and Laser Optical Disk.

All consultative services are provided to public agencies without charge, however, actual film production is provided at cost. The bureau provides film production and storage services for state, county and municipal agencies and authorities. Every effort is made to accommodate local government filming needs on a contractual basis.

General Issues

Choice of records for microfilming

Consideration must be given to the choice of records for microfilming. From a technical perspective, county agencies and authorities should be aware that such factors as document size, texture, color and condition determine appropriate film format, size and camera type. Different levels of updating and retrieval activity also impact upon decisions regarding format, sequence, retrieval systems and reproduction equipment.

From an economic viewpoint, it is important to note that conversion of paper records to microfilm can be expensive, especially without proper analysis and planning. System maintenance involves costs as well. Procedurally, the use of microfilm often requires development of guidelines for access and duplication. All of these factors must be considered in relation to the documents designated for filming.

Before choosing records to be microfilmed, counties must evaluate their records systems to identify current problems and discover appropriate solutions. Records management principles must be emphasized in this process. As a general guideline, records with retention periods of seven years or longer may be considered for microfilming. Records that accumulate in large volumes, presenting space or filing difficulties are also viable choices. Additionally, vital records and historical documents are appropriate for filming because of preservation and security considerations.

Before filming is undertaken, officials should examine alternatives to determine whether workable, economic records management options are available. For instance, authorized disposal of old record accumulations may be possible simply by using current records retention schedules and submitting destruction request (see II-4). In some cases, records retention schedules may be modified to reduce unduly long records retention periods. Revised filing procedures or diligent use of semicurrent records storage may remedy records access and storage difficulties (see sections III & VI), thereby avoiding the need for microfilming.

Film Formats

There are two basic film formats, or microforms, available for microfilm applications: roll film — reels, cassettes, cartridges; and unitized film — microfiche, microfilm jackets, and aperture cards. Choice of a film format depends upon the characteristics of the paper records being filmed and the nature of the records system itself.

1. **Roll Film** — is a common format in which images are recorded in a fixed sequence along the length of a microfilm roll. The fixed sequential recording method reduces misfiles of individual documents. Also, roll film can be encoded with retrieval marks or blips, which allow automated retrieval devices to locate image frames within seconds. Thus roll film is most effective in large, centralized retrieval systems that require a minimum of updating. Conversely, active records systems that require frequent updates and additions may not be suitable for conversion to the roll format.

    a. **Microfilm Reels** — are available in 16mm and 35mm widths. Filming of standard office documents is usually done on 16mm film, while 35mm film is generally used for drawings, maps and oversized documents. Access time to documents using microfilm reels alone is relatively slow. This is due to the sequential arrangement noted above.

    b. **Microfilm Cassettes and Cartridges** — are used in conjunction with mechanized and automated retrieval devices. Cassettes feature a reel to reel arrangement, while cartridges have a single core. Both devices serve as protective coverings for reels and facilitate image retrieval. A related item is the standardized magazine developed by the American National Standards Institute (ANSI). These removable magazines can be used with all 16mm reels and with a number of different mechanized and automated retrieval devices. This interchangeability can be very helpful in a multi-vendor environment.

2. **Unitized Film** — is produced in a flat format, and replicates discrete file units. This allows for easy updating. However, unitized microforms may be misplaced more easily than roll film.

Therefore, file maintenance may become difficult in large systems. Also, the production of unitized formats is generally more labor-intensive and can be more expensive than roll film production, especially in the filming of paper records.

a. **Microfiche** — is a 4"x 6" film sheet. Images in this format are recorded in frames in a grid pattern. Eye-readable title strips are added to each unit to aid in retrieval activities. Microfiche is particularly effective for systems that require high volume microform duplication and distribution.

b. **Microfilm Jackets** — are transparent plastic carriers which are divided into chambers. Strips of 16mm or 35mm film can be inserted into the chambers. This feature allows for the addition of images as documents are added to a file. The standard 4"x 6" jacket usually contains up to sixty 16mm images. Custom designed jackets can hold both 16mm and 35mm film strips. Microfilm jackets are very effective for active files and can be easily duplicated and distributed. Also, because microimages are placed within the plastic chambers of the jacket, damage to the images from scratching and handling is greatly reduced.

c. **Aperture Cards** — generally contain one 35mm microimage, in a transparent, rectangular window cut in a computer card. Engineering drawings, maps and other oversized documents are usually inserted in the window. Aperture cards that accommodate 16mm strips are also available.

Archival Film and Film Quality

Microfilm that will endure as long or longer than high-grade bond paper is known as archival microfilm. The only film stock that allows for the production of archival microfilm is silver-halide. Film that requires dry chemical processing is not acceptable for any application. However, silver-halide filming alone does not provide archival quality. Proper film processing and storage conditions are equally important to longevity. The American National Standards Institute (ANSI) has specified requisite guidelines for archival film. These criteria are incorporated into the division's statewide microfilm standards.

Consistent film quality is another key factor in successful microfilm systems. The most important qualitative elements are resolution and density. Film resolution relates to the clarity of film images, while density denotes film background contrast. Proper resolution and density ensure readability and high quality duplication. Both of these elements can be measured through procedures and devices developed by the National Bureau of Standards (NBS) and Association for Information and Image Management (AIIM), the professional association for the microfilm industry. Statewide standards follow these national guidelines.

Additional considerations which affect film quality include work place standards. Food, drinks, and

smoking must be prohibited and works areas must be cleaned regularly.

Taking Advantage of Microfilm Systems

Developing a Microfilm Option

County officials should exercise caution when developing a microfilm option. The Bureau of Micrographics and Alternative Records Storage will assist agencies and authorities in determining the feasibility of micrographics or other imaging systems. All consultative services are provided to public agencies without charge, however actual film production is provided on a charge-back basis at cost.

Division analysts and technical experts will help agencies and authorities plan and prepare to ensure that a micrographics option will meet their needs in the most economical and practical manner possible. Current record systems are evaluated and documented, without the bias of needing to make a commission on a sale, so that a clear vision of the function of microfilm within an office's records system may be developed. Ideally, this should be done prior to contacting perspective vendors for equipment and supplies.

Preliminary Activities

The division provides officials with a framework for developing a realistic microfilm option that includes:

1. **User Education** — Preliminary research is necessary to gain a basic understanding of microfilm technology. In addition to the basic information provided by the division, useful material is published by the Association for Information and Image Management (AIIM), and the General Services Administration (GSA).

   The division can be especially helpful because of its knowledge of perspective vendors and frequent contact with public sector microfilm users.

2. **Acquaintance with Statewide Standards** — Compliance with the New Jersey microfilm standards published and monitored by the division is essential to guarantee the viability and legality of microfilm in judicial and administrative proceedings. All microfilm produced by the division is guaranteed to meet these standards.

3. **Acquaintance with Records Destruction Process** — In most cases, paper records may be destroyed after they have been microfilmed providing that authorization procedures are followed (see II-4). The law also requires that a microfilm certification letter be submitted to provide a guarantee that microfilming has been conducted according to minimum quality and documentation standards (see Appendix C). In no instance may records be destroyed

without written authorization.

Current System Review

In order to develop an effective microfilm system design, it is necessary to review the current records system. This will provide county agencies and authorities with the ability to articulate their requirements and compete more effectively for budgetary allocations. In turn, a clear view of benefits and requirements will help reduce misunderstanding regarding the nature and scope of production services contracted from the Bureau of Micrographics and Alternative Records Storage, or the range of goods and services supplied by a vendor. Accurate cost estimates will also be possible. The basic considerations in a current records system review are:

1. **Record Series Description** — The records targeted for filming should be clearly identified and described. The description should include the record series title (see II-I), subject matter (financial records, case files, etc.), retention period, current volume and projected yearly accumulation in cubic feet or linear inches.

2. **Physical Characteristics** — The physical characteristics of the records will impact upon the filming method and film format. Important items include document size, color, type (tissue, bond, carbon, etc.) and condition (torn, frayed, thin, or good condition). It will also be important to list whether the documents are one or two-sided and to note any special storage characteristics (stapled, bound, loose sheets, etc.). If the documents have mixed physical characteristics, the percentage of each characteristic in relation to the total records volume should be determined.

3. **Handling and Maintenance Procedures** — County agencies and authorities should note current procedures for the handling and maintenance of the records to be filed. Knowledge of filing and updating procedures is especially significant, for this information helps to determine the order in which documents will be filmed. An office should document whether an alphabetic, numeric or alpha-numeric file scheme is being used. Procedures for indexing and retrieving the records should also be described. Other important items are updating (add, change or delete), frequency of updating, reproduction and duplication methods, distribution methods and mode of use (reference only or annotation).

4. **Privacy and Confidentiality** — Public records often contain sensitive information regarding individual citizens. Officials must take care to note privacy and confidentiality restrictions, especially when the records are moved off-site for filming.

5. **Problem Statement and Needs Assessment** — The final phase of a current system review entails the development of a summary statement regarding the difficulties involved with the maintenance of the current system and a listing of requirements for the alleviation of these difficulties. The problem statement and needs assessment should be based upon the data generated in the previous system review stages.

   The needs assessment will often aid in the selection of appropriate film formats and equipment for the microfilm system. For example, a records security problem requiring cost-effective off-site storage would indicate a need for a basic roll format with simple, inexpensive

reader devices. An active records system requiring frequent updating and records distribution would indicate a need for a unitized (jacket) format with high volume film duplication facilities.

Microfilm System Specifications

Once a current system review has been completed, technical specifications, or the particular requirements for accomplishing the microfilming of a records system are developed. Factors which need to be considered include:

1. **Film Specifications** — Microfilming in accordance with precise film specification, as routinely done by the Microfilm production unit of the bureau, will help to ensure that counties receive a usable product that meets requirements.

    a. **Film Types** — There are required types for original and duplicate microforms. Only silver-halide film produces archival master negatives. Common copying films are diazo, vesicular and direct-image (silver-based) film. When indicating copy film type, it is important to remember that a number of duplicate microforms may be required. This, of course, affects overall system costs.

    b. **Film Polarity** — Film images may be produced as either negative — i.e., light characters/dark background, or positive — i.e., dark characters/light background. In most cases involving standard office documents, negative polarity is chosen.

    c. **Film Size and Format** — As discussed, the film format (roll or unitized) and film size (16mm, 35mm, 105mm, etc.) is chosen on the basis of the requirements of each specific system.

    d. **Film Image Arrangement and Mode** — There are three image arrangements: simplex, duplex and duo. Simplex is generally used in standard applications where single-sided documents are filmed in a single row. Duplex arrangement allows for the simultaneous recording of two-sided documents on separate portions of the film. Duo arrangement provides for high density storage through the placement of microimages on both the top and bottom portions of a film reel. The two film modes, cine and comic, refer to the position of individual images on a microform.

        In the cine mode, images are viewed from top to bottom along the length of the film. This mode is most often used for oversized documents. Comic mode, which is generally used for standard size documents, allows viewing from top to bottom along the width of the film. The comic mode provides for more economical film use.

    e. **Reduction Ratio** — This is the correspondence of the linear measurement of the original document to the microimage — i.e., 16:1, 24:1, 42:1, 48:1, etc. A reduction ratio of 16:1 therefore indicates that the film image is one-sixteenth the size of the original or source document. As a rule, the 24:1 reduction ratio is specified for standard office documents; the 16:1 ratio is usually designated for drawings or maps. Higher reduction ratios yield greater film image storage per microform. However, higher reduction ratios

may also adversely affect film readability.

f. **Indexing and Labeling** — Individual microimages and microforms are identified through the development of secondary indexes and labeling instructions. Indexing for roll film can be specified in conjunction with a number of finding aids including: flash card targets, line/bar coding, odometer readings, sequential numbering and blip marks. Unitized film can be indexed, through use of notch coding, keypunching, color coding and title strip indexing.

g. **Film Targets** — Statewide standards define required film targets that identify and certify the filmed records. These targeting requirements are routinely included in the production work supplied by the bureau.

2. **Camera Specifications** — In addition to film requirements, the type of microfilm cameras to be used should be also be noted. The three standard camera types are:

a. **Planetary Camera** — This is most commonly an overhead camera unit, with a filming plane and external lighting fixtures. There is, however a planetary camera with internal lights and automatic feed. Filming on a planetary camera is accomplished through the placement of documents on the filming plane and the manual triggering of the filming unit. This camera is preferred for filming archival documents or collections of files with mixed paper characteristics.

b. **Rotary Camera** — These cameras use an automatic filming mode in which documents move through the camera. Imaging and film advance operations are automatically synchronized. Rotary cameras are best suited for documents that are uniform in size and thickness.

c. **Step and Repeat Camera** — A variation of the planetary camera, a step and repeat camera is used for the production of microfiche. Images are produced in a grid-row format. A common application for step and repeat filming is the production of frequently updated, widely distributed reports and publications.

3. **Processing and Quality Control** — Proper control of processing and film quality is essential to the success of the microfilm project; therefore, mandatory requirements in these two areas are established by the statewide standards. Items of particular importance are residual thiosulfate levels and resolution and density measurements.

4. **Using Private Vendors** — There may be mitigating circumstances in which a commercial microfilm service firm may be chosen to provide services that are offered by the division or could be offered in-house. As with any considerations to use a private vendor for any services, county agencies and authorities must examine the long-range costs and budgetary levels, project the rate of growth in their active files and honestly compare the alternatives.

It is important to stress that all microfilming must be done in accordance to statewide standards published and monitored by the division. Microfilm that does not meet standards will not be a legally accepted substitute for paper, and consequently will not be admissible in a court of law (see Appendix A).

General Vendor Responsibilities — If there are sufficient mitigating circumstances to warrant contracting with a private vendor, in addition to having the vendor(s) provide filming, processing and duplicating services, vendors should be responsible for several related areas:

a. **Maintenance of File Integrity** — Provision should be made for protecting and securing the records to be filmed. This is especially important whenever sensitive or confidential information is involved. Specific procedures guaranteeing the safe handling of such records should be included in the system specification.

b. **Documentation** — Any private service company contracted should be required to maintain, for a reasonable period of time, records relating to production and quality control activities for proof that services have been rendered in accordance with specifications.

c. **Turnaround and Records Access Requirements** — Officials have a right to expect timely service. Therefore, turnaround requirements should be specified. Also, if off-site filming is necessary, provisions for authorized access to records at the vendor's premises should be made.

d. **Contingency Plans for Continuous Operations** — County agencies and authorities should require vendors to indicate all contingency plans for continuing production operations in the event of equipment malfunction or other disasters.

e. **Retake Policy** — Vendors should be held responsible for film retakes that result from operator error, substandard film or negligence. A county agency or authority should never be charged for such activity.

It is important to note that the division's Central Microfilm Unit is considered to be one of the most advanced microfilm operations in the United States, and that the resolution of all of the issues discussed above are considered routine business practice.

5. **Further Considerations**

a. **User Equipment and Supplies** — County agencies and authorities should have equipment that is compatible with their specified microfilm system. Reading and retrieval devices are especially important and must be chosen with care. For example, a 16mm roll system that requires paper copies for annotation would require a 16mm roll reader-printer. Finally, supplies for the system, such as paper and toner, should be planned and budgeted for.

b. **Related concerns** — include the availability of user equipment in separable, inter-changeable components or modules. An agency could require both roll and unitized microforms. In such cases, it would be advisable to purchase a reader device that

accommodates both microforms.

Depending upon contract arrangements, vendors can provide appropriate equipment or advise on the basic criteria for purchases. The division also provides advice on equipment purchases.

Summary

Micrographics is an exacting technology that has many appropriate, cost-justifiable uses in the management of county government records. Micrographics provides general advantages of increased space savings, improved file integrity, added security, more efficient retrieval and preservation of highly-referenced, fragile or irreplaceable original documents.

Officials must first take steps to gain control over their records systems thorough implementing basic records management techniques such as records appraisal for transfer of semi-current records and timely disposition of useless records. By having exhausted other appropriate options, officials will be certain that any microfilming conducted will be done because that technique offers the best possible solution to their record-keeping problem.

County agencies and authorities considering conversions to microfilm systems should contact the Bureau of Microfilm and Alternative Records Storage in the Division of Archives and Records Management. The bureau monitors compliance with statewide microfilm standards for New Jersey's public sector. The bureau's Central Microfilm Production Unit also produces microfilm for state, county and municipal agencies on a charge-back basis. Bureau staff is available to meet with officials and visit offices for assessments or advice at no cost.

More information about micrographics is available by calling the Bureau of Micrographics and Alternative Records Storage at (609) 530-3229 or writing: New Jersey Department of State, Division of Archives and Records Management, 2300 Stuyvesant Avenue, CN 307, Trenton, New Jersey 08625.

Files Management

Introduction

Filing is the process of categorizing records for effective storage and retrieval. The basic element in this process is the record series. A record series is a distinct collection of records with similar characteristics — i.e., content of subject matter, types of documents, or identical retention periods (see II-1).

Files management involves analysis of the arrangement and sorting of record series, and is undertaken to achieve control of records systems. Factors considered in this analysis include:

1. **Material** to be filed.

2. **Arrangement techniques** — i.e., classification and access systems, and

3. **Equipment and supplies.**

Objectives

The objectives of a files management program are to provide efficient and economical arrangement and sorting of active records and to implement a filing system that allows information to be retrieved rapidly and with ease whenever it is needed.

General Principles of Files Management

Role of Records Management Techniques

Specific records management techniques used as files management tools are:

1. **Record Disposition** — Inactive material and records which have satisfied their retention requirements should be removed from active files. This is accomplished by using records retention schedules and following the statewide disposal process of records destruction or transfer to an archives (see II-4 and IV-2).

2. **Records Storage** — Semi-current files should be transferred to a records storage

center, unless volumes are so minimal that transfer would not be cost effective (see section III). The expense of storing semi-current records in prime office space is not cost justifiable. Semi-current records can be kept more economically in a records storage center since reference activity is low and because they are not needed for daily business. Also, the presence of semi-current records reduces retrieval efficiency in active files.

Files Management Considerations

After transfer of semi-current records and disposition of inactive records has been achieved, the following steps must be taken:

1. **File analysis** — Officials must determine which items to file. This process includes the discarding of duplicate copies of documents unless the copies contain valuable notes and comments.

2. **File preparation** — File folders should be labeled neatly and consistently.

3. **File arrangement** — Files should be categorized in the simplest manner possible so that a minimum amount of time is required for retrieval. Filing system categories must correspond with organizational function rather than structure. This is especially important since organizational structure is subject to frequent change, while functions generally remain constant.

4. **File placement** — Items should be put into files on a regular basis — i.e., daily or weekly, depending on the amount of items accumulated. It is important to note that records should be filed in appropriate file equipment.

5. **File access procedures** — A central file or cross reference index should be established and a charge-out system used for borrowing files. Duplication should be strictly regulated, with the charge-out system replacing the need to photocopy documents.

6. **File creation** — New files should be created as they are needed. File titles should be unique to the new subjects. A specific subject title, project title, or general title which indicates a common factor linking all documents in a particular file, is essential to an efficient filing system. Lack of specific filing, such as the use of miscellaneous files, is inefficient because it requires lengthy searches for records in alternate locations. ***"Miscellaneous" should never be used as a file title or label.***

Files Management Process

File Audit

A file audit is the first step in developing a files management program because knowledge of record holdings as well as current filing practices is necessary before an appropriate filing system is instituted. An audit requires a listing of record holdings, and can either be a simple checklist or a

detailed report, depending upon the requirements of each office.

A records inventory (see II-2) can be used in place of a file audit. An inventory will not only supply identical information, but will also provide additional details which can be useful in other records management applications. A Records Series Inventory form (see Appendix C) should be used to compile this information.

Once an inventory or audit is completed, inefficiencies can be identified and remedied. A filing system should then be audited after it has been functioning for at least a year. Files may also be selected for storage or destruction during inventories or audits. This saves time and avoids additional work.

Filing Systems

Classification

Classification refers to the method of determining and arranging subjects in a file series based on an evaluation of future retrieval needs. A classification system should be logical, standardized and practical, and use the simplest terms available. It should be based on function, and be exclusive so that subject categories are not redundant. Finally, it should be flexible enough to permit future expansion. Classification systems are alphabetic, numeric or alphanumeric. All other systems are variations of these basic types. Classification is the most important part of a filing system.

Alphabetic Classification

Alphabetic classification is ideal for a simple filing system with a very low volume of files, generally under 1,000. Alphabetic systems involve filing by subject name. A name could be that of a particular project, company, individual, or geographic location. This type of system requires consistent application. For example, if one person creates a file entitled, “Trenton Warehouse Project,” all subsequent documents should be marked with this title so that they are filed in the “Trenton Warehouse Project” file. If not, someone unfamiliar with this project file could file new documents in the “Urban Property” file.

Numeric Classification

Numeric systems are most useful where there are a large volume of files, generally ranging from 1,000-10,000 files. Invoices, checks, and requisitions are most often requested by number. However, numeric filing systems require cross references for instances in which a number is not known. For example, real property can be listed numerically by block and lot numbers, with alphabetic cross references available by street address or by owners.

Numeric systems also require maintenance. If numbers are unclear, or are transposed when typed or written, records can easily be misfiled. There are several types of numeric systems: straight numeric, duplex numeric (including middle-digit indexing and terminal-digit indexing), decimal filing

systems (e.g., the Dewey Decimal System), and chronological systems. Each system has advantages and disadvantages which should be weighed before being instituted.

Duplex numeric systems are most useful in situations with a very large number of files, generally 10,000 or more. A duplex numeric system consists of segmented file numbers divided into distinct groups that are sequentially arranged, and includes middle and terminal digit systems:

1. **Middle digit systems** — The middle section is the primary division or file drawer identification; the left section is the secondary division or guide identification; and, the right section is the tertiary division or folder identification.

2. **Terminal digit system** — The right section, or terminal digits are the primary or file drawer identification; the middle digits are the secondary or file guide identification; and the left section is the tertiary or file folder identification.

Both middle and terminal digit systems are used for very large file series, such as patient and insurance policy files, so that filing and retrieval can be spread evenly throughout the filing system.

Alphanumeric Classification

Alphanumeric systems include a number/letter combination in which files are arranged in a general category by subjects, i.e., alphabetically and then assigned numbers for subdivisions. This method of filing is not usually found in office applications and is most often reserved for library classification.

Access Considerations

Criteria used in selecting a filing system include the types of access the user has, or wants to have, to a file and the classification system.

Access can be either direct or indirect. With a direct access method, no index is necessary to search the files. Subject categories are listed as complete words. Therefore, a direct access filing system must be alphabetic. Direct access allows a user to browse through the files. If the filing system is properly arranged, less time is spent in filing and searching. Moreover, users can readily determine where the record series begins and ends.

An indirect access method employs the use of a code which requires an index as a cross reference. By using the indirect access method, browsing is not possible. Although indirect access is especially useful for maintaining files that require confidentiality, maintaining an index can be time-consuming.

Access and Classification Aids

Color Coding — An important aid that can be used in records access and classification systems is color coding. Associating one or more colors with a subject or number assists in file identification and control and reduces eye fatigue. Misfiles are reduced since an incorrectly placed file will be detected easily.

Filing Equipment and Supplies

General Considerations

Since approximately 70 per cent of the expense of maintaining a filing system involves labor costs, county agencies and authorities can realize significant savings through the selection of equipment that aids filing and retrieval efforts. In choosing equipment, the following criteria must be evaluated:

1. **General cost effectiveness** — The expense of equipment, repairs, operations, supplies and floor space should be considered in relationship to the annual growth rate of files and budgetary levels. Three elements which determine the general cost effectiveness of a filing system are:

    a. **Space efficiency** — The capacity of a room or area should be evaluated for accessibility to equipment and files.

    b. **Equipment efficiency** — Acquiring equipment that provides effective file storage and retrieval at the lowest possible cost per file inch is a major concern when purchasing equipment. Another factor may include potential of equipment to be updated, modified or augmented.

    c. **Equipment security** — Purchases must be made with due consideration given to the ability of equipment to discourage unauthorized access and to protect records against fire.

Types of Filing Equipment

When choosing filing equipment, factors such as size and volume of records, anticipated retrieval functions, and the physical limitations of an office, especially amounts of available space, must be considered based on budgetary considerations and cost-benefit analyses (see Appendix D, Cost Comparison Chart). Types of filing equipment include but are not limited to vertical cabinets, lateral cabinets, open shelving and combinations of mobile and mechanized equipment. The following is a general guideline of advantages and disadvantages of these kinds of equipment:

1. **Vertical cabinets** — One of the most commonly used items of filing equipment, these cabinets generally provide 25 filing inches per drawer. Vertical cabinets are most efficient in small offices where a limited number are needed. However, as the number of cabinets needed increases, space efficiency decreases because of the large amount of office space required for their use.

2. **Lateral cabinets** — The popularity of these cabinets for general office use has increased in recent years due their space efficiency and easy accessibility. The most common lateral cabinets are 36 or 42 inches wide and hold 32 or 38 inches of files per drawer, respectively. A vertical cabinet will hold only 25 inches of filing per drawer.

    Another advantage of lateral cabinets is their versatility. These cabinets can be adapted,

by the addition or deletion of an internal bar, for either letter or legal size filing.

3. **Open shelving** — This alternative is usually much more economical than vertical or lateral cabinets in terms of cost per filing inch to square foot of floor space. Open shelving permits faster eye contact and retrieval of files, as well as multiple user access. However, because shelves are not enclosed in the same manner as filing cabinets, they do not offer the same protection from fire or water damage or security against unauthorized access, unless shelves are installed in a secured, fireproof vault or have pull-down doors.

4. **Mobile shelving** — This configuration can provide the lowest cost per filing inch to square foot of floor space. Mobile shelving consists of shelving units installed on tracks for movement. An aisle can be created between any two units in order to gain access to a particular unit.

   A “mechanical assist” is a device which aids the user in moving shelves, and can be added to the units. Units can also be motorized to provide faster and easier access to shelves. It is important to note that access can be severely limited in mobile shelving configurations because only one section at a time can be used.

   Mobile systems can be tailored to suit a particular office. Generally, however, the amount of user access decreases as the depth of shelving aisles increases. Mobile shelving can provide security because units can be pushed together with the end unit covered and the entire system locked. This feature also provides some protection against fire and water damage.

   Mobile shelving has cost and floor load disadvantages. Weight of records placed on mobile shelves can exceed the weight bearing capacity of a floor and cause collapse. When plans for mobile or mechanized shelves are being reviewed, state officials must consult an engineer to determine if the floor is capable of supporting the estimated weight of records and shelves (see III-6). Another consideration is the prohibitive cost of moving when an agency relocates its offices.

5. **Rotating filing equipment** — This type of equipment uses motorized or power files and shelving. A motorized or power file consists of folders or trays placed on a shelf with each shelf assigned a location number. The user selects the location number of the corresponding file or item on a locator panel and the equipment rotates until the requested shelf is open to the user. The actual shelving unit is stationary; only the shelves move.

   Large quantities of records can be stored securely in a small space with this type of equipment. However, rotating filing equipment limits user access. It is also very heavy and may not be usable in some offices. Moreover, if the equipment becomes inoperative, files may be inaccessible to the user.

   Rotating filing equipment should only be considered for very large file operations in which equipment costs could be offset by significant space and labor savings. The general disadvantages of mobile shelving units also apply to rotating equipment.

6. **Equipment size** — Use of letter-size equipment is recommended wherever practical. Legal-size equipment should be used only in those instances in which more than one fifth of the files are legal-size, since a combined cost savings of at least 20 per cent can be realized by

using letter-size equipment and supplies. County officials, particularly purchasing agents, should discourage the use of legal-size documents, equipment and supplies.

Filing Supplies

Basic supplies for filing systems include folders, labels, guides, and charge-out cards or folders. Neatness should be consistently maintained in the preparation of file folders. For example, labels should be typed and affixed in the same position on each folder. The use of straight-edge folders, — i.e., folders in which the tab spans the entire length, is recommended. This aids eye contact for file retrieval. File folders should never be overcrowded. The average folder can hold about three-quarters of an inch of paper, or approximately 75 sheets. A new folder should be used when the number of items needed to be filed becomes greater than three-quarters of an inch.

File folders come in a variety of styles. For general use throughout the filing system, 11 point reinforced tab, straight-edge cut, i.e., square cut, Kraft folders are preferred. Point size refers to the thickness of file folder stock, e.g., one point is .001 inch. This type of folder is sturdy and its dark color does not show soiling as easily as manila folders.

Other types of folders commonly used in filing systems include:

1. **Light weight manila folders** — best used for materials with a low reference rate,

2. **18 point Kraft folders** — useful for records with longer retention periods (over 5 years) and high reference activity.

3. **25 point pressboard folders** — useful for records with very long retention periods and constant reference, and

4. **Suspension folders** — most often used in computer printout files and in many lateral and vertical file cabinets.

All folder types should be used carefully because file folders can occupy up to 40 per cent of the filing capacity of a cabinet. File folder guides should also be used to divide files into sections for easier reference and retrieval. Guides can indicate primary divisions, such as general subjects or secondary divisions, or more specific topics under the general subjects.

Vendor Selection

As with any considerations to use private vendors to provide equipment and supplies, county officials must first determine their filing system needs and develop options for achieving goals based on costs and budgetary levels, with due consideration given to projected rates of growth in active files.

After this process has been accomplished, officials will be capable of communicating their requirements accurately. Knowledge gained from files management is an assurance that a county

agency or authority will not be overwhelmed by deft salesmanship and purchase file equipment or supplies that are unnecessary, costly or otherwise inappropriate. Preliminary research provides a basis for evaluating vendor services and ultimately saving tax dollars.

A vendor/client relationship need not be adversarial. Reputable vendors work diligently to accommodate their customer's needs, and officials can assist in the process by:

1. **Visiting an area installation**, and speaking to file system users to determine their satisfaction with a system, assessment of problems, etc. This information can be useful in modifying a proposal. Most vendors are eager to accommodate their customers and, provided that no conflict of interest occurs, their installations may be shown to other prospective customers.

2. **Obtaining information** from the vendor concerning who installs filing equipment, and what kind of warranty is given. For mobile systems, information requested should include details about disassembly and reassembly, as well as modularity, i.e., whether filing equipment can be updated or added to.

Vendors can offer additional helpful suggestions. These ideas should be evaluated on the basis of filing needs as discovered through file audits conducted as part of a files management program, or records inventories conducted as part of a general records management program.

Summary

One of the most effective records management techniques is the organization of active files through use of files management. Files management involves the analysis, preparation, and arrangement or classification of file series for rapid and easy retrieval of information. The files management process begins with a records inventory or a file audit. An inventory or audit yields an understanding of system needs and provides a basis for choosing equipment and supplies and qualifying vendors.

Periodic audits of active files, in conjunction with implementation of records retention schedules to purge inactive materials and transfer semi-current records to a records storage center or area, guarantee the continuation of economy and efficiency in active files.

Aiding county officials and their staff with the organization and maintenance of active files through files management is the work of the Bureau of Records Management. The bureau provides consultations and offers assistance in records management concerns, including files management, free of charge to state agencies and authorities.

To obtain assistance, call the Bureau of Records Management at (609) 530-3200, or write: New Jersey Department of State, Division of Archives and Records Management, 2300 Stuyvesant Avenue, CN 307, Trenton, New Jersey, 08625.

Vital Records Management

Introduction

Vital records must be protected from destruction because they offer direct evidence of legal status, ownership, accounts receivable and the particulars of obligations incurred by local governments government. These records are critical because they contain information required to continue functioning during a disaster, or to reestablish operations after a calamity has ended. Vital records are irreplaceable, and in some instances must be maintained in their original form to be legally admissible as evidence.

County and municipal agencies and authorities whose vital records program grows out of comprehensive records management will recognize overlaps in goals and methods for records preservation, and be able to achieve their objectives more economically and efficiently than those offices without a comprehensive program. Yet, even by itself, vital records management is a cost-justifiable public strategy because it is a form of self-insurance that preserves a public trust.

Objective of Protecting Vital Records

The objective of vital records management is to prevent the loss of information which is critical to the continuing operation of an organization in the most efficient and economic manner possible. In the public sector, vital records programs protect the public interest and ensure maintenance of individual rights.

Liabilities Due to Loss of Vital Records

Although only three to five per cent of most office's records can be classified as vital, without this minimum number of records the daily business of an agency would stop and the public interest would be endangered because of:

1. Vulnerability to litigation,

2. Exposure to the unplanned expenses of financial settlements or loss of revenues,

3. Disruption of efficiency due to gaps in information, and

4. Breaks in the continuity of operations.

Although these potential dangers are similar to the risks posed by haphazard, unauthorized records destruction, losses that occur during a catastrophe carry an added burden because of the severe strain that a disaster places on staff and resources. A vital records management program

is instituted to avoid these potential dangers.

The Process of Vital Records Management

Records Classification

Knowledge of record holdings is necessary before appropriate controls for vital records protection can be instituted. Identification and analysis of record series is most easily accomplished during a routine records inventory (see II-1) conducted as a first step in developing a comprehensive records management program, or during a file audit (see VI-2) used to organize active records.

To a great extent, records classification has been greatly simplified by the development and publication of general and specific retention schedules for use by county and municipal government. Records retention schedules are essentially lists of what kind of records exist in an office, a description of contents, as well as a listing of the prescribed time periods for which they should be kept in both active storage in their office of origin and semi-current storage at a records storage center.

The records of each office identified by inventory or audit are matched to their corresponding retention schedules, and can be placed into four general categories:

1. **Nonessential Records** — This type of record is listed on a records retention schedule for routine destruction in accordance with statewide guidelines. Loss of these records presents no obstacle whatsoever to restoring daily business.

2. **Useful Records** — These are records that, if lost, might cause some inconvenience but could be easily replaced. Loss of these records does not present any real obstacle to restoring daily business.

3. **Important Records** — This category of records, although replaceable, is reproduced only at considerable expense of funds, time and labor. Loss presents aggravating but surmountable obstacles to resumption of operations, and

4. **Vital Records** — These records are irreplaceable, or copies do not have the same value as the originals. They are essential to the continuity of servcies during a calamity or the restoration of daily business if it has been interrupted.

Some examples of vital government records include the current, regularly updated information needed for daily activities such as accounts receivable; master personnel listings, those that include employee name, title, rate of pay, length of service, current leave time status, pension, disability and other insurance information, and increment and anniversary dates; irreplaceable research or development data; original, signed copies of major contracts or agreements, including change orders and amendments, and insurance policy information.

Other types of vital records are the minutes of governing boards, authorities, and commissions, and the standing executive orders of mayors or county executives. These records are considered vital because they establish the policies which direct operations and may even provide the legal basis

for an agency's existence.

Protection Methods

Estimating the severity of a calamity which could destroy an agency or authority's records is a basic step in determining appropriate protection measures for vital records. This projection, along with an examination of costs of protection methods and budgetary levels, provides a basis for choosing options.

The three most commonly used ways to secure vital records are duplication and dispersal, on-site storage, and off-site storage:

1. **Duplication and Dispersal** — Many records can be adequately protected by simply distributing duplicate copies to one or more locations other than the central or primary building.

   Duplicates may be created in paper, microfilm or magnetic tape. In choosing a format, considerations should include volume, frequency of updates, storage requirements (especially any need for special environmental controls, e.g., magnetic tapes and original master negatives of microfilm require controlled temperature and humidity), equipment and power requirements, and costs and budgetary levels.

   Certain methods have clear-cut advantages, for example, computer output microfilm (C.O.M.) is particularly suited for storing large volumes of frequently updated computer runs (see X - 13).

   Once duplicates have been created, they may be distributed or dispersed in a variety of ways. Records are often distributed to locations other than the agency's primary building as part of regular operating procedures. Local government offices that use the division's microfilm production services have microfilm master copies stored at the New Jersey Records Storage Center. Counties that enjoy in-house or contract computer servies most likely have computer back-up tapes stored at a different location. These dispersed records are kept for their minimum retention periods and are available to appropriate officials.

   In cases where vital records are not being dispersed as part of routine procedures, special measures could be adopted for distributing them solely for the purpose of protecting them. Use of this technique has practical limits imposed by the degree of care given to records by offices which have no specific need to receive them.

2. **On-site Storage** — Often a county or municipal agency has only one facility, or only one facility with staff, equipment and supplies capable of housing their active records.

   On-site vital records considerations include the analysis and improvement of buildings or facilities, equipment and supplies, as well as the institution of procedural controls. Examples are:

   a. **Building considerations** include establishing the adequacy of floor load capacity, lighting and ventilation, fire ratings of walls and doors, smoke and fire alarms, sprinklers

or halon fire suppression systems, and eliminating such hazards as leakage and infestations by insects or vermin.

b. **Equipment considerations** include the construction of fire-resistant vaults, or the purchase of cabinets or safes that meet or exceed Underwriter Laboratories specifications.

Underwriter Laboratories rates storage and filing equipment on the basis of interior temperature and humidity levels during various lengths of exposure to fire. As a general rule, paper begins to deteriorate at 350 degrees Fahrenheit with humidity greater than 65 percent, while the limits for magnetic tape, microfilm and photographs are considered to be 150 degrees Fahrenheit and 85 percent humidity.

c. **Procedural considerations** include routinely updating vital records, prohibiting food, beverages and smoking in records areas, segregating combustible material and conducting periodic electrical, building and fire inspections.

Another important procedure is the regular testing of a vital records program through simulations to ensure adequate functioning in the event of a genuine emergency.

Exclusive reliance upon on-site vital records protection measures is not recommended because of the potential for total or near total destruction of a single location in a disaster.

3. **Off-site Storage** - involves keeping vital records in a single location separate from the agency's main building. An off-site storage center should be close enough for access, control and updating. Locations which may be considered for off-site vital records storage include any suitable public buildings owned by a government agency which are resonably secure. It is important to note that whenever vital records are semi-current, they are eligible for storage at a records storage center, provided that all other storage criteria have been met (see III-3). However, many vital records are active, and therefore are not stored in a semi-current storage facility.

The advantages of central, off-site storage include:

a. **General effectiveness** — It is less likely that an off-site storage facility, such as an offi-site records storage center, will be affected by the same disaster that occurs to an agency's building.

b. **Ease of retrieval** — Unlike dispersal techniques where vital records may be distributed to a number of off-site locations, central off-site storage simplifies access,

c. **Ease of control** — The ability to incorporate the same design and procedural considerations for security, facility and equipment compatibility, as used in on-site storage, and

d. **Ease of staffing** — The ability to use trained records professionals to administer the facility.

Program Staff

Vital Records Coordinator

For those counties that have already established a comprehensive records management program including procedures for managing vital records, the records manager is the most appropriate person to coordinate any special efforts required.

When no comprehensive program exists, it is advisable to appoint a coordinator from an existing office with considerable experience in managing records.

The vital records coordinator who is not a government agency's records manager or connected on a daily basis with record-keeping systems and procedures, must become familiar with record holdings by conducting records inventories and by interviewing representatives to review their record holdings.

Vital Records Team

An important part of successful vital records programs is the appointment of appropriate staff members to assist the vital records coordinator. The major function of this team of agency officials is to aid the coordinator in determing when a record becomes vital and to provide for adequate protection. Expertise in administration, finance, law, and records management should be considered in selecting team members. Division analysts are available to assist state agencies and authorities with their vital records management planning.

Communications

Because identifying vital records and selecting appropriate protection measures is necessary to prevent loss of critical information in the event of disaster, it is important for the vital records coordinator to communicate policy and procedures to all offices and enlist their active participation and support.

Counties should consider publishing a vital records manual or incorporating a vital records section into their official policy and procedures documents, as well as conducting periodic seminars for officials and their staff. Smaller counties may be able to use a more informal procedure, such as a vital records master list. If officials are aware of the importance of vital records and know the

protection measures adopted by their organization, then it will be easier to assemble or reconstruct critical files. This will permit government services to continue without interruption should a disaster occur.

Summary

Vital records management programs are instituted to prevent the loss of information critical to the daily operations of county and local governments, to permit agencies and authorities to continue functioning during a calamity or to reestablish services afterward.

A vital records management program begins by conducting a records inventory to gain knowledge of record holdings. Records identified should be classified into one of four categories: nonessential, useful, important and vital. Appropriate protection methods are chosen to safeguard vital records and include duplication and dispersal, on-site and off-site storage. Vital records policies and procedures may then be communicated by issuing a vital records manual or through less formal means.

Aiding local officials and their staff with vital records management is the work of the Bureau of Records Management. The bureau provides assistance to local government offices without charge. Records analysts are available to visit offices for on-site consultation.

Assistance is available by calling the Bureau of Records Management at (609) 530-3200, or writing: New Jersey Department of State, Division of Archives and Records Management, 2300 Stuyvesant Avenue, CN 307, Trenton, New Jersey, 08625.

Disaster Recovery

Introduction

County agencies and authorities are required to provide for the protection of their records by statutory law. The law recognizes that security is a fundamental factor in records management because governments are dependent upon records to document their actions and transactions, and thereby protect the rights of citizens. A comprehensive records management program can prevent the untimely destruction or decay of records and is the most efficient disaster prevention strategy for county government.

The safeguards required for records span the range of simply using a records storage center for semi-current records which are kept temporarily (see section III), to the complex, environmental controls required for permanent records administered by an archives (see section IV). Additionally, a vital records protection program preserves that fraction of records which are critical to continuing daily business against total destruction due to ordinary hazards or extraordinary calamities such as hurricanes, earthquakes, fire, flood, explosions, or any other natural or man-made disasters. (see section VII)

Even if a county has not yet instituted a comprehensive records management program because of budgetary or other constraints, a vital records program can minimize the effects of a calamity. Disaster recovery or salvage techniques are enormously simplified by the implementation of even minimal preventive measures.

Objective of a Disaster Recovery Program

The objective of a disaster recovery program is to salvage records which have been damaged by accidents or disasters in the most efficient and economic manner possible. In the public sector, a disaster recovery program is necessary to reconstruct vital information needed to ensure the continued operations of government.

The Process of Disaster Recovery

Preliminary Concerns

County officials must be aware of their record holdings. This knowledge should include not only the identification of record series and their retention and disposition dates, but also their value to

the daily operations of government: nonessential, useful, important or vital (see VII-2). Disaster prevention and recovery efforts are restricted to vital records protection because records salvage techniques are expensive and time consuming and are not cost justifiable for non-vital records.

Two disaster prevention services must be emphasized:

1. **On-site and off-site vital records considerations** — include the analysis and improvement of buildings or facilities, equipment and supplies, as well as the institution of procedural controls (see VII-2) to protect against damage or destruction from fire, water and other disasters, fluctuations of temperature and humidity, infestation by pests and vermin, and pollution.

2. **Safeguarding privacy and security of records** — through creating access authorization procedures and instituting theft prevention measures in on-site storage locations.

Periodic inspections of active files and an agency's active records storage facilities should include random examinations of file cabinets and storage boxes for signs of deterioration. Also, access to records should be monitored to determine that records are secure.

Although there can never be an absolute guarantee against destruction from a disaster, vital records protection can provide a cost-justifiable strategy to minimize the effects of a calamity. Time and money spent to prevent a records disaster will always be less than the cost of a salvage operation.

Salvage Operations

Despite the steps taken to prevent disaster, records will occasionally be damaged. Coordination and speed are extremely important for effective salvage efforts. Once conditions become favorable for records deterioration, reversing damage becomes less successful the longer salvage is delayed. For example, mold will grow on wet paper within 48 hours. The following guidelines are recommended to assist state agencies and authorities in conducting a salvage operation:

1. **Building inspection** — As soon as possible after fire, flood, explosion or other calamity, officials with expertise in electrical, building and fire safety should examine a facility for potential hazards and certify its safety.

2. **Communications Center** — In some cases, it may become necessary to set up temporary location in the immediate vicinity of the salvage operation with telephones or walkie-talkies.

3. **Recovery Coordination** — The lines of authority and responsibility should be clearly established by the:

    a. **Coordinator** — An appropriate official should be appointed to oversee recovery efforts, and

    b. **Departmental Liaisons** — Officials with custody of records that have been damaged in the disaster should be assembled by the coordinator to aid in identification of records.

4. **Logistical Support** — Appropriate staff and equipment will be needed to conduct a records salvage operation successfully, and include:

    a. **Employees** needed to assist in the salvage operation may include truck drivers, sanitation workers, local police and fire officers, and building maintenance workers, among others.

    b. **Equipment and supplies** needed to accomplish salvage objectives will depend upon the nature of the records disaster and can include temporary lighting, communications, transportation, tables, containers, and chemicals, and

    c. **Consultants** needed to assist in the salvage operation include a records analyst to identify retention requirements and authorize legal disposition, and an archivist to treat salvageable records or identify future conservation needs. In some instances, a commercial contract vendor may also be required to participate in a salvage operation.

Salvage Methods

The coordinator, departmental liaisons and consultants begin to salvage records by:

1. Determining if a list of the records involved in the disaster exists, and where the list is kept.

2. Determining if there is an off-site storage location with duplicate records (e.g. master microfilm copies held at the Records Storage Center), and

3. Examining salvageable records to determine:

    a. **What can be saved**, and

    b. **What can be destroyed** through appropriate Request and Authorization for Destruction procedures granted by the division at the site.

In either of these cases, the identification of record series and their corresponding retention and disposition requirements forms the basis for decisions to save or destroy.

4. Salvageable records can then be packed and labeled to ensure continuing identification of the records.

After these steps have been taken, appropriate methods for salvaging vital records can be identified. Recommendations depend upon the nature of the records disaster:

1. **Water damage** — Whether the disaster is a fire or flood, records can be saturated. Water damaged records can be salvaged by:

    a. **Fast drying** — A blueprint or photographic dryer can be used for small quantities of wet records. To prevent scorching or curling, documents should be run through several times at a low temperature setting.

b. **Slow drying** — A photocopy dryer can be used. It is similar to a blueprint dryer, but removes moisture more slowly and can generally accommodate larger documents.

c. **Space drying** — Spreading records on tables or floors in a room with fans circulating warm, dry air at slow speed can remove moisture from larger quantities of wet records. Salvaging water damaged records by this method requires an area large enough to accommodate the records and involves turning the records periodically.

d. **Freeze-drying** — This is a process for drying substances by freezing them first and then going directly from solid to gas in a high vacuum at a low temperature. This minimizes water damage.

   Plastic milk crates are ideal containers for packing waterlogged records because they readily allow for evaporation. After packing, freezer space must be acquired. Salvaged vital records are then frozen to prevent further damage. Arrangements may then be made with a private vendor to freeze-dry the records.

e. **Blotting** — Bound volumes require special drying which includes placing them on end with covers spread apart and pages interleaved with blotting or absorbent paper that must be changed frequently. After the bindings have become partially dry by exposure to air, wax paper jackets may be used to allow flat storage with closed covers. The volumes may then be stacked with blotters under and between them with light pressure applied to flatten sheets and prevent warping of covers.

f. **Film salvage** — Water-soaked film should be kept wet to prevent it from sticking together. Dirt and debris should be gently removed from film to avoid abrasion and film should be stored in clean water. Clean, wet film may then be rinsed in a solution to harden the emulsion before it is dried.

In those instances where mold has begun to grow on wet records, the records must be sprayed with a thymol-trichlorethylene solution to stabilize mold growth as soon as the records have been dried.

2. **Special handling considerations** — Drying alone may not be enough to preserve certain records. Assistance may be necessary to duplicate singed, scorched, or charred records. For example, seemingly illegible charred documents can often be read by exposure to ultraviolet light. Other preservation and conservation strategies that may be needed are similar to those required by archival records (see IV-4) and may include:

   a. **Encapsulating documents** - in mylar or other polyester film,

   b. **Microfilming** — the filming of damaged documents provides a means of generating durable working copies as well as archival master copies for permanent storage. This eliminates excessive handling of the original and helps prevent further deterioration.

   c. **General Care and Handling** — Restoration, mending and cleaning techniques require special expertise in order to ensure that their application does not unwittingly aid deterioration.

3. **Salvage of Permanent or Archival Records** — Although the primary concern of a disaster recovery effort is salvaging vital records, many permanent records, such as manuscripts, maps and other instrinsically valuable documents cannot be considered vital because they are not necessary for the daily operations of government. However, county agencies and authorities are legally required to maintain these records for their continuing historical, legal, fiscal and aesthetic value.

   Because of their enduring value, no salvageable permanent records will be authorized for destruction by the division. However, such permanent, non-vital records are inactive. Their complete restoration may be postponed, provided that the condition of the records has been stabilized, and a delay in the application of conservation techniques would not threaten the records.

Records salvage is expensive and time consuming. Salvage efforts should always be conducted by qualified, experienced professionals. Counties can minimize the adverse impact of disasters by implementing vital records protection programs and establishing a disaster recovery plan. A disaster recovery plan confers authority and identifies the elements of a records salvage operation before a calamity strikes.

It is especially important that information needed for a disaster recovery program be updated on a regular basis. Contact information needed for a records salvage operation, including names,addresses, telephone numbers, policies and procedures, will be useless if information is not current.

Summary

Disaster recovery programs are conducted to salvage county government's vital records in the event of disaster. The preliminary concerns include instituting a vital records protection program and providing security. Necessary elements of a salvage operation include a building safety inspection immediately following the disaster, the establishment of a communications center, the appointment of a recovery coordinator and appropriate departmental liaisons, and obtaining logistical support which includes necessary employees, equipment and supplies, and consultants.

Using records retention schedules, decisions to salvage or destroy records can be made by the division. Salvage methods are specific to the volume and media of records being saved.

Aiding county officials and their staff with disaster recovery is a cooperative effort of the Bureau of Archives and Records Preservation and the Bureau of Records Management of the Division of Archives and Records Management. The division provides records salvage advice to county offices without charge. Archivists and records analysts are available to assist in recovery efforts.

For disaster assistance call the Bureau of Archives and Records Preservation (609) 292-6260, or the Bureau of Records Management at (609) 530-3200. To discuss disaster prevention planning call or write: New Jersey Department of State, Division of Archives and Records Management, 2300 Stuyvesant Avenue, CN 307, Trenton, New Jersey, 08625.

Forms Management

Introduction

A form is any printed instrument, usually paper, which contains predetermined blank spaces for the insertion of information. Information collected by forms can include anything needed to fulfill the purpose of an organization. Forms play a central role in the transaction of business because they are a standard method of collecting and conveying information.

Forms are necessary for the operation of an organization because they document variable information and predetermine information that remains constant. Forms also provide the easiest and most efficient link between manual record-keeping and data entry.

Additionally, forms are much easier to prepare than open-ended instruments such as letters or reports, because when a form is well designed, responses are confined, i.e., the information being sought is defined and the respondent knows what is expected.

Forms management assures that only necessary forms are designed, produced, and distributed, and that unnecessary documents are eliminated. The elements of forms management generally consist of forms analysis, forms design, forms history files, and forms procurement techniques.

Objective

The objective of a forms management program is to provide the most efficient and economical collection of information needed by an organization to fulfill its purpose. The program operates through:

1. **Design efficiencies** - that provide properly designed, cost-effective forms, redesigning existing forms, designing new forms if needed, eliminating unnecessary forms, and combining forms where possible, and

2. **Control efficiencies** - that develop and implement guidelines and standards for the production and use of forms by controlling printing, handling, ordering, storage and distribution.

By achieving control over forms, forms management helps an organization serve the purposes for which it was created. Because of their contributions to economy and efficiency in record-keeping,

forms management programs are integral parts of the records management process.

Forms Analysis

Every form should correspond to a process that fulfills one of the purposes or functions of an organization. A given process will involve all of the steps necessary to record, interpret, communicate, and retain information needed to serve this purpose.

A form generally begins a process. For example, to obtain a driver's license, a form is filled out. This initiates a process that eventually results in the issuance of the license.

Forms analysis is an evaluation of the need for a form, the purpose of a form, its relationship to other currently used forms, and finally an assessment of its effectiveness as a communications tool. Forms analysis therefore must involve a review of the processes the form serves.

Some forms analysis considerations include:

1. **Needs analysis** — Knowing the mission of the organization or agency, and evaluating the specific purpose that requires a process, will allow consideration of:

    a. The purposes of a form, i.e., what the form is intended to accomplish, and

    b. A definition of essential elements in the form that cannot be subject to change or deletion.

    An essential exercise of forms analysis is to challenge the very need for a form, all elements within a form, and finally the need for every copy of the form.

2. **Work flow** — Reviewing the manner in which work is accomplished within an organization, i.e., how an office completes a process, evaluates:

    a. Steps in the work flow process including the types of operations required and when they are performed,

    b. Staff assignments, skill levels, limits of individual responsibility, supervisory structure, and

    c. Work environment, i.e., physical location, equipment, and supplies used.

3. **Related activity** — Addressing similar processes or functions which may be occurring elsewhere. If a similar form already exists, it may be possible to alter it to accommodate a new or dual purpose.

4. **Useage** — The ease with which a respondent completes a form that begins a process is a major concern. The ability of the form to communicate information which obtains the desired result, i.e., the completion of the process, is equally important.

    The required number of copies of a proposed form should anticipate whether the form will

be sent to other offices. The form should identify who will keep the original and the copies.

All useage considerations bear directly upon the efficiency and cost of record-keeping operations.

A records management consideration which should be emphasized is the status of forms. All forms and copies of forms that contain responses, whether created or received by an office, are records and are subject to the considerations of active files management (see section VI), semi-current storage (see section III), and legal disposition (see II-4), among others.

Forms Design

Forms design is the execution of a pencil draft or automated equivalent which shows the location of lines and copy and any specification which can be indicated by a drawing. These include items such as the location of perforations and hole punching; paper size, color, and weight; ink color; type size and type style.

Forms may be designed by using graphics software packages available for micro, mini and mainframe computers. The advantages of automated forms design include increased speed in preparing drafts and revisions of forms. Also, camera-ready originals may be produced with a high quality output device such as a laser printer.

Whether forms design is automated or manual, forms should be created to gather necessary information efficiently and economically. A form that requires the least amount of time and labor to collect and distribute accurate information is ideal.

Forms Design Elements

Ballot Boxes

Effective forms are understandable and easy to fill out. A form that uses ballot boxes and pre-printed choices can be completed more quickly and easily than a form which requires respondents to handprint or type an open-ended choice.

Ballot boxes or check boxes are 2/10" wide by 1/6" high, and should always be placed in front of their respective pre-printed choices which should include any possible response to a question. For example, when a “yes” or “no” answer is required, a ballot box should be placed in front of the word “yes,” and another should be placed in front of the word “no.” Both choices must be included on the form, because the absence of a mark where only one choice exists could mean that the respondent simply forgot to answer the question.

Captions

Blank spaces on a form must be captioned to indicate precisely what information is being requested. Captions must be specific and should leave no doubt about how to fill out the form. For example, the caption “date” should not appear alone if there is any question about which possible date is being requested. A specific caption, such as “birth date,” “today’s date,” and “transfer date,”

increases the accuracy of a response.

The most efficient location for a caption is in the upper left hand corner of a box. This permits optimum writing space within the box for the response. Also, a respondent's answers are easier to read if a small caption is in the upper corner.

This is especially important when a form is being used for data entry into a computer. Improperly captioned forms slow down and cause errors in the data entry process. If the caption is placed on a line, valuable writing space is lost and responses may be illegible. If it is placed under the line, the respondent may choose to place information either above or below the line.

Distribution and Routing Information

Each form should contain distribution and routing information if the form is to leave the office where it was completed. Multi-part forms must contain instructions for the distribution of each of the parts of the form. Such information can be included as part of the general instructions for using the form, or it may be placed in the bottom margin. Advantages of multi-part forms include greater control of distribution and a reduction of photocopying costs, however, multi-part forms cost more to print.

Form Numbers

All forms must be assigned a number. Forms should also include an edition date. Form numbers are used not only for identification, but also to create forms history and construction files (see page -), and to indicate the origin of a form.

Ink

Black ink is the most cost-effective color to use in printing forms. Color inks add to the cost of forms not only because they are more expensive, but also because when two or more ink colors are used on the same form an additional press run is required and the printing process becomes more costly.

Instructions

Forms should be self-explanatory. Instructions should be placed to the immediate right of a forms's title or directly below the title. Instructions should be numbered, and in outline form to indicate the necessary steps to complete the form.

Lines

Lines are used to create sections on forms, direct the person completing the form to certain areas, and to produce a more aesthetically pleasing document.

Three line thicknesses are used in the design of most forms:

> **Bold lines** are generally used for the border of forms, to separate major sections, or to draw attention to a particular box that summarizes or finalizes information, such as a "grand total" box at the bottom of a column of figures.

Medium lines are used to separate sections of a form within the border of the form.

Light lines or “hairlines” are used to draw ballot boxes and lines within sections.

Margins

A margin on the form is the area between the ink borders and the paper edge. The standard margin is 3/10" on the left and right, and 2/6" on the top and bottom. Top and bottom margins are slightly larger than side margins to allow space for form numbers and routing information.

Some completed forms will be stored in a binder, and will require a one-half inch margin on the left side or top of the form to allow for the holes. Other forms will be placed on a clipboard and space will be needed at the top or left side of the form. Knowledge about the way a form will be used or stored is another benefit of having completed forms analysis.

Paper Size, Weight and Color

Paper sizes and weights are derived from printing industry standards. Using a paper size which is not standard, or readily available, will result in increased printing costs because of the additional cutting and handling required. Use of uncommon paper sizes and shapes also cause filing problems because oversize forms have to be folded to be placed in standard file folders and cabinets, and undersize forms are more likely to be lost.

Comtemporary presses accept 17" x 22" paper from which the following four basic sizes can be cut without waste:

8 1/2" x 11" — the letter size sheet,

8 1/2" x 5 1/2" — half of a letter size sheet,

8 1/2" x 3 2/3" — approximately one-third of a letter size sheet, and

4 1/4" x 5 1/2" — one quarter of a letter size sheet.

These paper sizes can be used either horizontally or vertically, and will satisfy most information recording needs. It is strongly suggested that state agencies and authorities avoid the use of legal size, 11" x 14" paper because of additional costs in purchase, preparation, handling, filing and storage.

For single sheet, single-sided printing, standard paper stock is thirteen pound Bond. For doublesided printing, sixteen pound or heavier paper stock is recommended to prevent bleed-through of print. Card stock should be considered for forms with very high reference or handling rates.

Colored paper adds to the cost of a form. White paper should be used unless an exception can be justified. If an identical design is used for both a debit and credit form, different colors may be used to distinguish one from the other. If a multi-part form is being used, different colors can help clarify distribution requirements.

Shading

Shading should be used to help guide the eyes, highlight columns, or draw attention to a particular part of a form. It may also be used to isolate areas on a form that should not be completed by the respondent. Shading should never be used merely as decoration.

Spacing

Allowing enough space for a respondent to enter information on a form is critical. Too little space will not permit accurate information to be entered easily, while too much space may suggest that additional information is being requested. In either case, the lack of proper spacing can confuse a respondent, lengthen the completion process, and reduce the accuracy of responses.

Some general standards for providing space in forms include: horizontal spacing measured in tenths of an inch, and vertical spacing measured in sixths of an inch. Proposed forms should be designed using forms design paper or automated equipment which employs a grid that corresponds to these dimensions. Forms design paper is readily available from most large stationery suppliers or through art or graphics specialty suppliers.

Single lines entries should be 2/6" in height and long enough to contain requested information. When entries are written or handprinted, approximately five characters will fit to the inch. If a typewriter is used, ten characters will fit to the inch.

Whenever it is anticipated that a form will be completed with a typewriter, vertical spacing should conform to typewriter spacing, i.e. single spaces on a typewriter are one-sixth of an inch. A form must be designed so that the typed keys never fall on a line and ballot boxes are always placed on the one-sixth line.

Titles

All forms must be identified by a form title. The preferred location for the title is the top left corner, or the center of the top line. Form titles should be brief and should identify the primary subject or purpose of a form.

Type Styles and Sizes

When selecting type style and size, the primary goal is ease in readability. Generally, “fancy” type, or a typeface that has many hooks or curls, called serifs, should be avoided. Gothic or sans-serif typeface, sometimes called “clean” type, is recommended to enable a respondent to read captions and instructions as quickly as possible.

For most applications, type size will range from 6 points to 18 points on all forms. The following sizes and their corresponding uses are recommended:

6 pt. type — should be used for marginals, form numbers and other identifying information which appears outside form borders,

8 pt. type — should be used for a box design identifier,

10 pt. type — should be used for section headings and routing information,

14 pt. type — should be used for titles, major section headings, and

18 pt. type — should be used for form titles.

Most type is available in either regular or bold. Bold face should be used only when special attention needs to be directed to a word or phrase, such as a title or section headings.

Creating a Simple Form

The upper left caption box design is the preferred method for designing a form. A caption is placed in the upper left area of a box and the entry is either handprinted or typed below the caption. This design allows a respondent who is completing a form the most space for entering information.

The following steps can serve as a guide in the preliminary design of a simple form:

1. **A list of the information or fields** - that will be recorded on the form should be completed. These fields should then be arranged in their order of appearance on the form.

2. **The amount of space an answer will require** - should be indicated in tenths of an inch next to each field. Some open-ended questions may be converted into pre-printed ballot box choices whenever a limited, predictable number of answers are possible.

3. **Proceed with forms layout** - using forms design paper, a sharp pencil and a ruler, or automated equipment:

    a. Draw all four margins,

    b. Place the form title and instructions, if needed, inside the top margin,

    c. Place the fields and boxes on the form, working left to right, top to bottom, using the list of necessary information that was compiled in step #1, and

    d. Enter the marginals and form number in the proper location.

This preliminary design or rough draft may now be photocopied and distributed for review. Agencies that will be using the form to collect information, or any others who might enter or extract information from the form should be included in the review process.

After the draft form has been reviewed and approved by all of the offices concerned, a copy may be used to prepare the camera-ready original and print the form. This work can be performed in-house or by a private vendor.

Forms History Files

Establishing a forms history file will enable the forms manager to maintain a selective, organized collection of data on the form itself. This information can assist the manager in making decisions about ordering new or current forms, identifying forms which contain duplicated information, defining the cost of forms and tracking the review process for new forms.

When creating a forms history file, one file folder should be used for each form. Each folder should be labeled with the form's name and number. Forms should be filed numerically by the form number. Each folder should contain the following:

1. Two samples of the form,
2. Drafts of proposed revisions of the form, if any,
3. All correspondence relating to the form, including approval signatures,
4. The camera-ready original, and
5. Details of ordering history, e.g., quantities, printing methods, and information such as listings of vendors and turn-around times.

Forms Procurement

When purchasing forms, care must be taken to order the correct amount. Too small a quantity will result in a higher cost per unit of the form. Insufficient quantities also increase the danger of prematurely exhausting the existing supply. A lack of necessary forms can prevent an organization from doing its job.

An excessive supply of any given form will add to storage costs. If a form becomes obsolete because of changes in programs or procedures, the excess supply will become useless. A good working relationship with suppliers can aid forms management efforts. Generally, most forms vendors have broad experience in the industry and can offer good advice.

A twelve to eighteen month supply of every form used by an office is the maximum amount recommended. To avoid depleting stock, inventory control is essential. This allows regulation of purchasing so that forms are on hand when needed. The ordering process must be anticipated so that new shipments are received when only one month's supply remains.

Developing Forms Management Options

Choice of an approach to obtaining forms management services for an agency or authority is determined by several factors. The content of many forms used by county government is often legislatively mandated or required by federal guidelines. A county can institute its own forms management program by:

1. Hiring a professional forms analyst,

2. Incorporating forms management duties into the responsibilities of existing in-house records and information management experts and providing adequate training, or

3. Contracting with a commercial forms design or printing firm to provide forms design and management.

The major concern of any arrangement which provides forms management expertise to county agencies is to design and produce documents that collect information in the most efficient, cost-effective manner possible. Forms design should aid the respondent, who must complete the form, as well as the county employee who must extract information from it.

Summary

Forms management assures that forms needed to collect information are designed, produced, revised and distributed in the most cost-effective and efficient manner possible, and that unnecessary forms are eliminated.

Some basic forms management considerations include conducting forms analyses, incorporating basic forms design elements, creating forms history files, and maintaining control over the purchase of forms. Basic forms design elements include ballot boxes, captions, distribution and routing information, form number, ink, instructions, line weights, margins, paper size and color, shading, spacing, titles, and type styles and sizes.

Approaches to obtaining forms management include hiring a forms designer, incorporating forms management duties into the responsibilities of an existing, appropriate staff member, or contracting with a vendor to supply part or all of an agency's forms design and management needs.

Consultations about forms analysis and design, or advice about establishing forms management programs are available free of charge. For assistance call the Bureau of Records Management at (609) 530-3200, or write: Department of State, Division of Archives and Records Management, 2300 Stuyvesant Avenue, CN 307, Trenton, New Jersey, 08625.

Electronic Records

Introduction

Electronic record-keeping is a reliable, cost effective means of managing information resources. Increasing volumes of data have been converted into computerized applications, paving the way for advances in the field of information management.

Objective

The objective of an electronic records management program is to process data efficiently through policies and procedures that address data input, storage, and output.

Preliminary Issues

Advantages of Electronic Record-keeping

Conversion of paper records to data and electronic formats has many cost-justifiable benefits, including:

1. Ability to develop data processing systems using personal computers
2. Reduction of manual labor requirements
3. Storage of vast quantities of data in a few square feet of space
4. Rapid data input and retrieval
5. Multiple user access

Despite such advantages, procedural and technical controls are needed to ensure effective maintenance because electronic data can be lost, altered or deleted much more readily than data stored on traditional media such as paper or microfilm. Converting from manual to electronic records systems does not eliminate records management concerns. Magnetic tapes, floppy disks, and optical disks use these systems to record information and are no less records than traditional paper or microfilm. Moreover, conversion to electronic recordkeeping can adversely affect the accessibility of records and the archival quality of the systems themselves. **The medium in which information is stored does not eliminate statutory or regulatory requirements for scheduling, maintaining, and disposing of public records.**

Document management tools have been developed to aid in determining the best methods for converting from paper to a data- or image-processing environment.

Records and Information Management

With the proliferation of information being produced, agencies must have the tools to ensure that it will be effectively used, including data, information, and knowledge management.

Data Management

It is not just enough to collect data for grouping and storage in a database. Data collection must have structure and relevance to the agency and be easily accessible to multiple users. It must be updated, routinely maintained, and backed-up or it will lose its value to an agency. Data collected and generated by an agency is its most valuable asset because it documents the daily course of business. Data management application tools can be employed to protect it and ensure its continued accessibility.

Information Management

Using a database as a foundation, information management combines and analyzes data for forecasting and decision-making. Data is no longer viewed as a collection of names and amounts; value is placed upon the innovative use and application of the data as information. Software can be purchased that supports information management applications.

Knowledge Management

Knowledge management looks at the volume of information generated and its relevance and relationship to the patterns, procedures and rules within an agency through tools that redirect the focus from the individual data to its overall role with users and processes. Information is seen as knowledge and exists in two forms: *explicit* and *tacit*. Explicit knowledge can be coded and distributed; whereas tacit knowledge is subjective and intuitive. Knowledge management sees information as being: *intermediate*, a relationship between provider and seeker; *internal* and *external*, contained and distributed within the agency and distributed outside to the users; *cognitive*, knowledge derived from the preceding which aids in decision-making; and *measurement*, the ability to quantify and measure the results. Workflow processes and design tools are often used in conjunction with knowledge management.

Planning and Selection

Workflow and Business Process Re-engineering (BPR)

In addition to employing the various management theories, agencies may seek to conduct Workflow and Business Process Re-engineering (BPR) studies for further analysis of their operational procedures prior to conversion to electronic record-keeping. Workflow studies evaluates business processes from execution to completion and the means by which to automate and improve them. It encompasses ideas such as document scanning and conversion, information and document multi-accessing and -routing, task and transaction analysis, mail merge, customer service, and groupware utilization. Business process re-engineering works in tandem with workflow studies to analyze an agency's business processes and determine their relevance and identify the methods and technologies available to improve them .

Feasibility Study

Feasibility studies are an effective method for an agency to determine if an optical disk system meets their records and information management needs or whether another technology, such as microimaging, would be more appropriate and cost-justifiable. These studies can provide an

agency with valuable insight and clarify recordkeeping objectives before a vendor is actively consulted. The feasibility study should consist of:

1. **General agency overview:** state agency mission, identify record series considered for conversion, target deficiencies in the records management system, and state rationale for seeking alternate technology

2. **Current System:** describe record series, procedures to manage record series, record series usage records disposition procedures, filing schemes, data processing interfaces, and record-keeping costs

3. **Success Factors:** needs statement and success factors resulting from data conversion

4. **Preliminary Evaluation:** criteria for alternate records system based on success factors and budgetary constraints, records hierarchy listing

5. **Alternate Technology:** list filing and storage methods and indexing adjustments needed, microimaging alternatives and electronic imaging employed

6. **Analysis of Alternatives:** conduct analysis of each alternative system and their costs/benefits

7. **Evaluation and Choice:** evaluate and eliminate systems that fail to meet criteria, and rate remaining systems

8. **Choose a system**

Request for Proposal (RFP)

Upon review and acceptance of the results of the feasibility study, agencies are ready to submit a Request for Proposal (RFP) to solicit vendor responses regarding their products. By conducting a feasibility study first, agencies provide themselves with a detailed picture of their current operational procedures as well as a guide for future needs, which will become part of the RFP. The RFP provides a valuable tool for system justification and authorization, and supplies an audit trail documenting hardware and software purchases. It also helps in the vendor/system evaluation process and may be used as a device to monitor vendor performance and adherence with system specifications and requirements. The basic outline for the RFP should include:

1. **System objectives:** the operational, employee productivity, and customer services benefits to be gained and problem areas to be eliminated by converting existing procedures to an automated environment

2. **Technical requirements: a** realistic view of the hardware and software needed to achieve system objectives, avoiding parameters that may be too costly, restrictive, or open-ended

3. **Project Management: the process by which** system migration, installation, testing, training, and upgrading will all occur

4. **Evaluation of Supplier(s):** the number of previous systems designed, years of

operation, etc.

5. **Pricing:** associated costs for hardware, software, training, and technical support

6. **Support:** maintenance and software upgrades, continuous training, enrollment in user groups

7. **Contracts & Licenses:** the final contract to obtain or lease the system hardware and software and licenses for the specified number of users

Agencies must critically review each proposed system to ensure that it conforms with the agency's stated objectives instead of driving the agency's needs.

Technical Expertise: Data and Image Processing

The identification of knowledgeable individuals associated with the creation, maintenance and disposition of computer systems and electronic records is essential. Local agencies may obtain technical assistance from the Information Technology Center (ITC) housed within the Department of the Treasury, Office of Information Technology (OIT), for expertise in system and application design, enhancement, and operations; and hardware and software procurement.

For advice in evaluating the desirability of acquiring an automated record image processing system, agencies should consult N.J.A.C. 15:3-3-4, Image Processing of Public Records; N.J.A.C. 15:3-5, Certification and Annual Review Image Processing Systems; and AIIM TR27 - 1991 Electronic Imaging Request for Proposal (RFP) Guidelines, as well as other national and international standards.

Alternative Technologies

When converting to electronic records, several technologies provide unique advantages over storing data exclusively on magnetic media or paper. But before one is chosen, agencies should: 1) dispose of obsolete records by submitting destruction requests in accordance with appropriate retention schedules, and 2) convert paper records to microfilm. These procedures will help determine when a alternative technology is the best method for preserving and storing certain information. Only through this means will the expense of a technology become cost-effective.

The objective of using a supplemental or alternative technology is to enhance records storage and retrieval methods by linking a computer with nonmagnetic storage media. Among the various methods available, the three most-often used techniques are: image processing, microimaging, and Computer Output to Microfilm (COM).

Image Processing

With image processing, documents are scanned, converted into digitized data, and recorded onto a disk. Because this process uses a highly-focused laser beam to record and read information, it can store large quantities of data in a small space. The disk consists of a base, recording material, glass or plastic housing, and a plastic cartridge enveloping the disk to prevent surface damage. Depending upon the disk type, the processes and materials used may vary from metal alloy, to plastic, and to glass, but all adhere to a standard format.

System Variations

WORM (write-once-read-many) uses one of three techniques for data storage. In one, a laser ablates or burns a series of small pits in the surface of the medium, exposing a reflective layer of substrate. In another, a laser applied to a metal overlay heats an underlying polymer and generates gases which push up on the metal and create bubbles; and in the third technique the laser melts two metals forming an alloy with a different reflective property. The disk can then be read by a low-power laser. As stated in N.J.A.C. 15:3-4.3, *Image Processing of Public Records*, WORM systems are preferred for use with long term and permanent records. WORM shelf life has been rated at 200 years.

CD-ROMs (read-only memory) were originally produced only by commercial vendors for high-volume market usage, but can now be reproduced by the users. The shelf life for various types of CD-ROMs varies from 10 to 200 years. Although the CD-ROM has become a de-facto standard for many optical disk applications, the Digital Video/Versatile Disk (DVD-ROM) is now challenging its continued use.

Erasable optical disk technology, which allows data to be written (entirely or in segments) and erased from memory, is the subject of much commercial research and development. This system raises serious questions regarding the issue of records integrity because the source image can be altered and deleted from its original form. Also of concern is the issue of the lack of compatibility between the various systems which include: CD-Erasable (CD-E), CD-Recordable (CD-R), and CD-ReWritable (CD-RW).

Magneto-optical or **thermo-magneto-optical** rewritable disks are recorded magnetically and read by a laser. Composed of glass or plastic, the disks are coated with a metal alloy layer known as rare-earth and transition metals (RETMs). The shelf life for magneto-opticals has been rated up to forty years. But, like other magnetic media, magneto optical can degrade due to magnetic fields and therefore is unreliable for long-term or permanent records storage.

Phase change rewritable disks use lasers to change their chemical properties, such as from a crystalline to an amorphous state, for recording data. The shelf life for phase change optical disks is approximately thirty years.

Advantages of Image Processing

By digitizing documents through image processing, record-keeping systems gain through:

1. **Fast processing of documents**

2. **Fast retrieval of documents**

3. **Extremely high volume of images stored on each disk**

4. **Enhancement capability**: digitized images can be augmented before printing

5. **Legal precedent in accordance with state standard** New Jersey courts accept optical disk facsimiles as legal substitutes for original documents, provided they are in compliance with state-issued standards for image processed records (N.J.A.C. 15:3 et seq.).

Disadvantages of Image Processing

Some of the intrinsic deficiencies directly attributable to image processing technology include:

1. **Non-archival status**: Many optical disks have short life spans, are technology dependent, suffer continued equipment durability and obsolescence, and must comply with standards

2. **Legal original or facsimile**: New Jersey courts accept original and their facsimiles as a legal substitute, provided they are both in compliance with state-issued standards for image processed records (P.L. 1994, c. 140). Noncompliance could place an agency in legal jeopardy, resulting in costly sanctions.

3. **High costs**: High costs of hardware and software, preparation, indexing, classification, and supplies, must be considered when evaluating an image-processing system.

4. **Forgery potential**: Provided that appropriate software is available, portions of an image may be electronically copied and grafted onto portions of another image to create a new image. By altering the index pointers that allow access to them, only the final image will be accessible.

5. **Life Expectancy (LE)**: Although competing manufacturers attest to the longevity of optical disks, microfilm has a greater proven life span of over 500 years. Given these apparent limitations, image processing seems to be best suited to extremely voluminous, active records systems with retention periods of ten years or less.

Microfilm and Microfilm Scanning

Due to the increased importance of microfilm and its concurrent usage with image processing systems, agencies seeking to initiate microfilming and microfilm scanning projects should consult with the Division of Archives and Records Management to ensure compliance with revised microfilming system standards as promulgated in N.J.A.C. 15:3 et seq.

Computer Output Microfilm (COM)

Computer output microforms are produced directly from a computer without a paper document. The recorder takes machine-readable data from a computer and converts it directly into human-readable data, most often on 4" x 6" (105mm x 148mm) microfiche sheets. Microfiche contain an eye-readable title row, up to 269 data frames and an index frame. COM can also be recorded on roll microfilm. Most items can be accessed on microfilm reader/printers in approximately ten seconds. As in any microphotography, for long-term retention of more than ten years, heat-processed silver halide film should be used for master copies (see section V - 4). For short-term retention, low-cost diazo or vesicular film is adequate.

Advantages of Computer Output Microfilm

Under appropriate circumstances, use of COM provides cost savings in computer time, information distribution, retrieval time, and storage space. COM is a faster and more economical data output medium than paper printouts because computer-output is:

1. Converted into human-readable text at speeds up to 342 computer pages per minute

2. Recorded on microforms that may be rapidly duplicated in quantity

3. Recorded on microforms at character reduction ratios that are 24, 42 or 48 times smaller than those produced by traditional printing methods, permitting storage of massive amounts of information in a small amount of space.

General Guidelines for Cost-Effectiveness

As its most obvious advantage, Computer Output Microfilming reduces paper output and consequently takes up much less storage space. COM is generally *most* cost-justifiable when computer printouts:

1. Have fifty or more pages each

2. Require multi-ply paper or duplicates

3. Are produced frequently and routinely

4. Are distributed widely and mailed

Computer Output Microfilming is ***least*** cost-justifiable when computer printouts:

1. Are produced only occasionally

2. Have few pages

3. Have several pages that need to be examined at the same time

4. Are hand-corrected or annotated.

Electronic Records Conversion and Management

Converting Legacy Systems

While often serving as the backbone of an information system, legacy systems can become outdated and problematic to maintain. As an agency and its responsibilities grow, its technology and continued access to its information must keep pace; otherwise an agency will fall behind. Converting a legacy system to a new system can be an intimidating task for both the information professional and nonprofessional. The conversion process is costly and time consuming and usually takes *one to five years* to accomplish, depending on its complexity. Extensive research and planning is vital for the conversion of the hardware, software, and data and should be recognized as a collective effort between records management and information systems staff to ensure a smooth transition and gain support and valuable input from the users among agency staff.

Prior to the conversion process the active and inactive data should be analyzed. Data that is

outdated and whose retention periods have expired should be best purged, and active data should be inventoried. Documentation should be written to serve as a hardcopy data index log that mirrors its online version.

The conversion process may best be implemented in small increments. A section should be converted and tested and documented that way the rest of the system will not be affected by the change. Thorough documentation should be kept to record the conversion process from start to finish to already allow for future expansion.

Backfile Conversion

One of the most important and overlooked aspects of records conversion is backfile conversion. While caught up in the excitement of new technology migration, personnel have a tendency either to downplay the conversion of the "legacy files" or to postpone it until the new system is up and running, leaving important old data inaccessible. During system migration planning, agencies often minimize the time and staff required for backfile conversion.

Backfile conversion addresses the same considerations that any other conversion process would require: document preparation, indexing, scanning, quality control /reporting, and media output. If limited staff availability for scanning is an issue, agencies have the option of outsourcing backfile conversion to a private service bureau for document scanning or microfilm scanning. But these options should be considered before planning a Request for Proposal (RFP).

Pre- and Post-Implementation Considerations

Local agencies and authorities should become aware of some specific considerations of electronic records management. Critical areas of concern include:

1. Evaluating and organizing manual records prior to conversion to electronic records

2. Creating documented procedures that address retention and disposition of electronic records

3. Coordinating manual and electronic records systems

4. Developing methods of electronic data retrieval and use

5. Protecting vital data files, applications and system programs, and supporting documentation

6. Establishing security to maintain privacy and confidentiality

7. Developing systems in accordance with state standards for image processing (N.J.A.C. 15:3)

8. Preserving information that has long-term research and historical value

9. Monitoring the life span of software and technologies related to electronic record-keeping systems

10. Replacing or updating obsolete hardware and software

Compatibility

Offices often purchase a computer without considering open system compatibility. This causes problems that range in scope from purchasing useless supplies to major errors such as acquiring inappropriate hardware. Such inefficiencies waste tax dollars. Whenever agencies propose a new system, they should show a preference for systems based on open architecture. Given constraints on state government resources, officials should consider:

1. Compatibility of a legacy system with current and anticipated system upgrades

2. Interchangeability of system hardware

3. Compatibility of the operating system and pre-packaged software

4. Ease of operation and understanding

5. Capability of upgrading hardware and software given budgetary levels

6. Appropriateness of a system to perform the level of tasks required by an organization

Documentation Manual

The documentation manual provides an understanding of a system's technical components and system design and structure. It should be created to provide information pertaining to: customized system and application programs source code, off-the-shelf software, data files used by the programs, program revisions, system upgrades, back-up procedures, file management, disaster prevention/recovery and security, object code, applications development documents, computer file listings, input-output procedures, and operating system and hardware specifications. The manual should be revised on a regular basis. Regardless of its source, computer system documentation should be maintained, updated, and indexed. Documentation ensures data integrity and provides compatibility information for open-system expansion. It also provides critical knowledge for media care, handling and storage.

Implementation and Maintenance: Basic Guidelines

In accordance with the state-issued standards for image processing, N.J.A.C. 15:3-4 et seq., agencies currently employing or considering conversion from paper records to electronic records should observe the following:

1. Conduct a feasibility study to determine if an imaging system is the most appropriate and cost-effective for meeting records management.

2. Establish systematic, comprehensive records management guidelines for paper, microimage, and image-processed records through use of state-issued records retention schedules and records disposition forms.

3. Consult the standards for image processing N.J.A.C. 15:3-4, *Image Processing for Public Records*, to ensure that existing systems are in compliance and have been certified and

that proposed systems will be in compliance for certification.

4. Develop and implement routine magnetic tape refreshing and optical media backup procedures.

5. Create and periodically test disaster prevention/recovery plans for storage media, hardware, and software.

6. Plan during the initial development stage, a migration path for system software and hardware upgrades, which should include the creation of a history file with copies of old and new system documentation and software.

7. Ensure that yours is an "open architecture" system with nonproprietary hardware and software.

8. Be wary of claims regarding new technologies without track records or standards.

9. Create a structured and documented data index, data is useless if it cannot be accessed or searched.

10. Use high-quality hardware and software for your entire system and avoid excessive handling of the software.

11. Permanent and long-term records with retentions of ten years or longer maintained on optical disk may require hardcopy or microfilm backup copies according to state laws and regulations; consult N.J.A.C. 15:3-4 et seq., Image Processing for Public Records.

Care and Handling Guidelines

Because electronic data can be lost, altered or deleted much more readily than data stored on traditional media, extraordinary care must be taken with storage and handling. The continuous interaction between a record's medium and the environment in which it is kept determines the severity and rate of records deterioration. As cited in N.J.A.C. 15:3-6, *Storage of Public Records*, the magnetic tapes and disks of automated systems must be kept in a manner that protects them from the principal hazards of:

1. **Excessive fluctuations of temperature and humidity** — High ranges of heat and humidity cause magnetic tapes to become unstable. Fluctuations of temperature and humidity cause tapes and disks to swell and contract with each climatic cycle, adversely affecting the conformity of their oxide coatings, thus shortening their life cycle

   Preventive measures include installation of ventilation and heating ducts, air conditioners or dehumidifiers to remove excess moisture from the air and keep the relative humidity of storage areas within a range of 40 percent and temperature at 62 - 68 ^{o} F, year round. Temperature and humidity tolerances vary according to equipment type, size and manufacturer. Manufacturers' equipment manuals should be consulted for appropriate recommendations. Instruments such as thermohygrometers and psychrometers should be used to monitor temperature and fluctuating humidity within the storage room, and repository surveys should be completed during these periodic inspections (see Appendix C) affected by direct or indirect contact.

To prevent accidental erasure, tapes and floppy disks must be kept away from sources of magnetic energy. Computer rooms are undesirable storage areas because of the high magnetic fields in use during operations of tape units. However, if no separate storage areas are available and tapes and disks are kept in a computer room, they should be stored at least two feet away from the hardware, preferably in a well-segregated area.

2. **Contamination by dust and other airborne impurities** — Dirt and dust pose a long-term hazard to all records. Accumulated dust and debris will contaminate disk or tape reels, eventually corroding record materials. In a storage area with high temperature and humidity, sulfides and nitrates from automobile exhaust can convert to sulfuric acid or nitric acid. Control measures include daily damp mopping of floors and daily vacuuming of floors and selected equipment such as printers, bursters, and decollators. In areas where disks or tapes are stored, avoid cleaning with metal abrasives such as steel wool, sweeping, dry mopping, or dusting. Additionally, floors should be waxed as little as possible, no more than once or twice per year. Other steps include installation and regular cleaning of air filters in heating and cooling ducts.

3. **Excessive or improper handling** — Although it is highly unlikely that magnetic tapes or cassettes will be erased accidentally be energy sources or magnetic fields, tape surfaces can be significantly affected by direct and indirect contact.

4. **Protection against fire, flood, and theft: a** disaster prevention/recovery plan should be implemented and routinely tested to safeguard magnetic tapes and disks.

5. **Data security measures**: identifying specific user access or restriction to specific menus, screens, documents, applications, and functions.

Some handling considerations include ***eliminating:***

a. Exposed disk or tape reel containers

b. Storing tapes on top of a tape or disk drive, to avoid heat and dust from blowers

c. Erasure of tape identification labels

d. Trailing loose tape ends

e. Flat storage or stacking of tapes or disks, to avoid warping or accidental damage

f. Food, drink and smoking

Other handling considerations include ***encouraging*** the use of:

a. Storage in a closed cabinet or shelf elevated from the floor and segregated from source paper and card dust

b. Use of tape-end retainers to prevent unwinding

c. Regular cleaning and precision winding to prolong life and decrease deterioration

d. Use of anti-static mats

Outsourcing of Services: Optical Disk and COM

Despite the cost-effectiveness of converting to either image processing or COM, the costs associated with their initial setup and conversion (including scanning of backfile documents) are high. If the volume, access, and retention of records justify the use of these technologies, agencies should investigate options to be used in conjunction with equipment purchases and in-house production, such as outsourcing to a private vendor for production services.

Through outsourcing, service vendors can provide agencies with state-of-the-art hardware and software and highly skilled personnel onsite or offsite, depending upon agency needs as contracted. This service can save an agency time and money by eliminating the disruption of the normal flow of business and further enhance productivity and flexibility. Issues such as security; confidentiality; document ownership, retention and disposition, and disaster prevention/recovery should be given careful consideration when making a vendor selection to ensure quality control, service, and adherence to state and federal public records laws, standards, rules, and guidelines.

Summary

Converting data to electronic format has many cost-justifiable advantages for the public sector. Government officials have become aware of the attributes of electronic records management and the elements necessary for establishing control over automated systems.

Electronic records programs may center upon record inventories and records retention schedules, documentation standards, and information processing administration. Additionally, an organizational perspective that includes the concerns of all affected offices is imperative.

Under certain conditions, supplementing records systems through appropriate technologies has cost-justifiable advantages for the public sector. Public officials should become aware of the specific advantages of alternative and supplemental technologies and their potential applications.

A **feasibility study** that incorporates records inventory, appraisal, and scheduling will help determine when an alternative technology is the best method for preserving and storing certain information and provide a foundation for issuance of a **Request for Proposal** for vendor and system selection.

Consultations or assistance on electronic record-keeping issues is available free of charge to local agencies and authorities. Call the Bureau of Records Management at (609) 530-3200 and the Bureau of Micrographics and Alternative Records Storage at (609) 530-3234, or write: New Jersey Department of State, Division of Archives and Records Management, P.O. Box 307, Trenton, New Jersey, 08625.

Managing Sound Recordings

Introduction

Electronic sound-recording systems are designed to provide complete and accurate documentation of public proceedings. In New Jersey, sound recording has become an integral part of the record keeping of courts, governing bodies, and various other agencies which conduct open public meetings. The sound recordings of any agencies or organizations that receive a substantial contribution of tax dollars are considered public records. The minutes or transcripts generated from such recordings are also public records.

The purpose of this publication is to provide basic guidelines for the transcription, handling, storage, and disposition of audio tape recordings.

Tape Transcription

Officials usually prefer to transcribe recorded proceedings because written documents are easier to scan, and because high-quality, acid-free paper will last much longer than magnetic tape. Verbatim transcription or an approved summary of the sound recording of a public proceeding is considered the official or "record copy" of the proceeding.

To assist in preparing transcripts or minutes of public proceedings, participants in a public proceeding should be asked to identify themselves and to speak loudly and clearly. Proceedings should be conducted according to commonly accepted rules of order to avoid overlapping conversations.

Requirements for generating transcriptions or minutes from tapes, and records retention requirements for maintaining taped sound recordings vary according to the type of public proceeding, such as:

1. **Judicial proceedings** — trials and hearings

2. **Meetings of public officials** — school boards, governing bodies, state and local agencies and commissions

3. **Meetings of public officials pursuant to the Municipal Land Use Law** — planning and zoning boards of adjustment

4. **Hearings** — public testimony offered to state agencies to help establish formal policy

Once a sound recording of a public proceeding has been created, whether voluntarily or in

compliance with statutory requirements, it becomes subject to the retention and destruction provisions of the ***Destruction of Public Records Act***.

Appropriate records retention schedules must be checked to determine the minimum required time period for maintaining tapes of public proceedings. Officials should call the Division of Archives and Records Management at **609-530-3200** for information or copies of records retention schedules.

Security Issues

Transcription of taped proceedings is frequently handled through an outside service bureau. When an outside vendor transcribes recordings, special steps must be taken to guard against tape loss. The Administrative Office of the Courts (AOC) requires specific procedures for transcription of courtroom proceedings (see bibliography).

General recommendations for creating tape transcriptions or summaries include:

1. **Security duplicates** — If practical, labeled security copies should be reproduced before delivering a tape to a transcription service.

   Producing security copies of judicial proceedings recorded on four-track tape requires special duplicating equipment pursuant to AOC guidelines.

2. **Documentation** — A written record should be kept listing each proceeding and its date, the date the recording was shipped to the transcription service, and the date of return with the transcript.

Contracting for Transcription Services

However frequent or infrequent a public agency's need for transcribing taped proceedings, it is important to solicit competitive bids for contracted transcription services. Transcription of recorded judicial proceedings is regulated by statute, which establish standard fees for producing court transcripts. Fees charged for other kinds of public proceedings are often much higher.

Tape Storage

Audio tape is highly sensitive to environmental changes. Exposure to fluctuations in temperature and relative humidity, excessive light, and polluted air all accelerate the deterioration of magnetic tape. Preservation of tape recordings therefore depends on protecting them from:

1. **Cycling of temperature and humidity** — Temperature and humidity fluctuations cause tape to swell and contract in cycles. Over time, these cycles can break down the bond between the tapes' magnetic recording surface and its supporting plastic backing, causing loss or distortion of recorded information.

   Tapes last longest when kept in a cool, stable storage environment: 60° F ± 5 degrees, with relative humidity of 45 percent ± 5 percent.

When in use, tapes should be protected from temperature extremes and heat sources. Avoid keeping tapes in or on top of an operating recording/playback deck for extended periods, because the deck's circuitry and motors can generate high levels of heat.

2. **Accidental erasure** — Exposure to magnetic fields can distort or erase tape recordings. Avoid storing or using tapes in close proximity to magnetic components in electrical motors, and magnetic fields generated by high voltage electrical lines, conduits, and transformers.

   Cassette audio tapes are manufactured with break-out tabs on the plastic case which, when removed, prevent erasure or over-recording of taped information.

3. **Contamination** — The accumulation of dust and debris in a storage environment or recording/playback deck affects the long-term preservation of audio tapes. Exposure of tapes to dust, liquids, chemicals, or airborne pollutants can break down the bond between their recording surface and supporting plastic backing, causing loss or distortion of recorded information.

   Storage areas should be supplied with clean, filtered air, and all floors and storage shelving should be vacuumed regularly.

   Tapes should be stored in individual containers to minimize exposure to dust and pollution. Containers should be shelved so that tapes rest vertically — not flat — to minimize distortion of cassettes and reels.

4. **Excessive or improper handling** — Magnetic tapes, even those in cassette format, are delicate and should be handled with care. Common handling problems to avoid are:

   a. **Touching magnetic recording surfaces —** Contact with hands and fingers exposes tape surfaces to oils and dirt, which can distort or obliterate recorded information.

   b. **Broken or frayed tapes** — Tapes are more likely to break or fray at the beginning and end of a reel, whether in cassette or open-reel format, because there they encounter the greatest stress from high-speed winding. Each tape should begin and end with several feet of unrecorded leader, in the event that breakage or fraying occurs.

   c) **Improper repair** — When breaks occur at a recorded portion of a tape, careful repair is necessary to avoid loss of information. Tapes of judicial proceedings must be sent to the AOC for repair.

      To splice tapes properly, overlap the broken ends and align their edges, making certain the glossy side of each faces up. Next, cut the overlapped ends at an angle and butt them together. Finally, connect the ends with professional splicing tape and trim the tape into the edge of the recording tape.

      Use aluminum splicing blocks for repairs, instead iron or steel equipment, because the latter can cause distortions in magnetic tape.

   d) **Lack of acclimation —** If a tape is used too soon after a change in temperature, poor

recording and playback can result. To eliminate this problem, magnetic tape should not be used for several hours after a major temperature change.

Given appropriate maintenance of equipment and relatively stable storage conditions, most current formulations of magnetic audio tape, whether used in a reel-to-reel or cassette format, will not deteriorate significantly over a period of ten years. Damage that does occur can often be corrected. For example, a splice will repair a break with little if any audible effect. Audio tapes, however, are not suitable for permanent preservation.

Tape Disposition

Audio tapes from which accurate transcripts or approved summaries have been generated in accordance with statutory or other requirements may be disposed of in one of three ways:

1. **Recycling** — Provided that a system is adopted to indicate the date of first and each subsequent use, audio tape can be reused after bulk erasure

2. **Physical destruction** — If a tape is too old to recycle, it should be discarded after bulk erasure to safeguard confidentiality.

3. **Transfer of possession —** through awarding custody to an archives.

In order to dispose of audio tapes, officials must submit a "Request and Authorization for Records Disposal" form to the Division of Archives and Records Management, following appropriate records retention schedules. For forms or more information concerning the disposal process, see section II of this manual.

Preserving Sound Recordings

A select number of sound recordings generated by public agencies document significant events worthy of long-term preservation. If stored under optimal conditions, audio tapes have a shelf life of ten years. The longevity of the sound recording itself can be further extended by duplicating it from old to new tapes. Eventually, however, repeated duplication will seriously degrade the quality of a recording.

Other preservation techniques range from basic storage methods described in the tape storage section of this appendix to the stringent environmental controls and special storage arrangements commonly provided by an archives.

Issues to consider regarding tape preservation:

1. **Conservation and repair** — Careless repair causes tape-winding problems. Use of common cellophane tape causes adjacent layers of recording tape to stick together. Under poor storage conditions, splices are the most common locations for the growth of fungus. To preclude these problems, inspect tapes regularly and resplice as appropriate.

2. **Cassette tapes** — are compact, easy to use, and offer reasonable fidelity for many applications, particularly for recording speech. But since cassette tapes diminish frequency response and dynamic range, they are not appropriate for long-term storage. To prolong the life of a sound-recording, copy cassette recordings onto an open-reel system using 1.5-mil mylar base tape.

Selected Bibliography

Berendt, Raymond D., and Corliss, Edith L. R., **Quieting: A Practical Guide to Noise Control,** National Bureau of Standards Handbook 119, Washington, D.C., 1976.

McWilliams, Jerry, **The Preservation and Restoration of Sound Recordings,** The American Association for State and Local History, Nashville, Tennessee, 1979.

Runstein, Robert E., and Huber, David Miles, **Modern Recording Techniques,** 2nd edition, Howard W. Sams & Co., Indianapolis, Indiana, 1986.

Salm, Walter G., **Cassette Tape Recorders: How They Work - Care & Repair,** Tab Books, Blue Ridge Summit, Pennsylvania, 1973.

Sound Recording Manual For The New Jersey Municipal and Superior Courts, Administrative Office of the Courts, Trenton, New Jersey, 1985. [Note: new edition forthcoming]